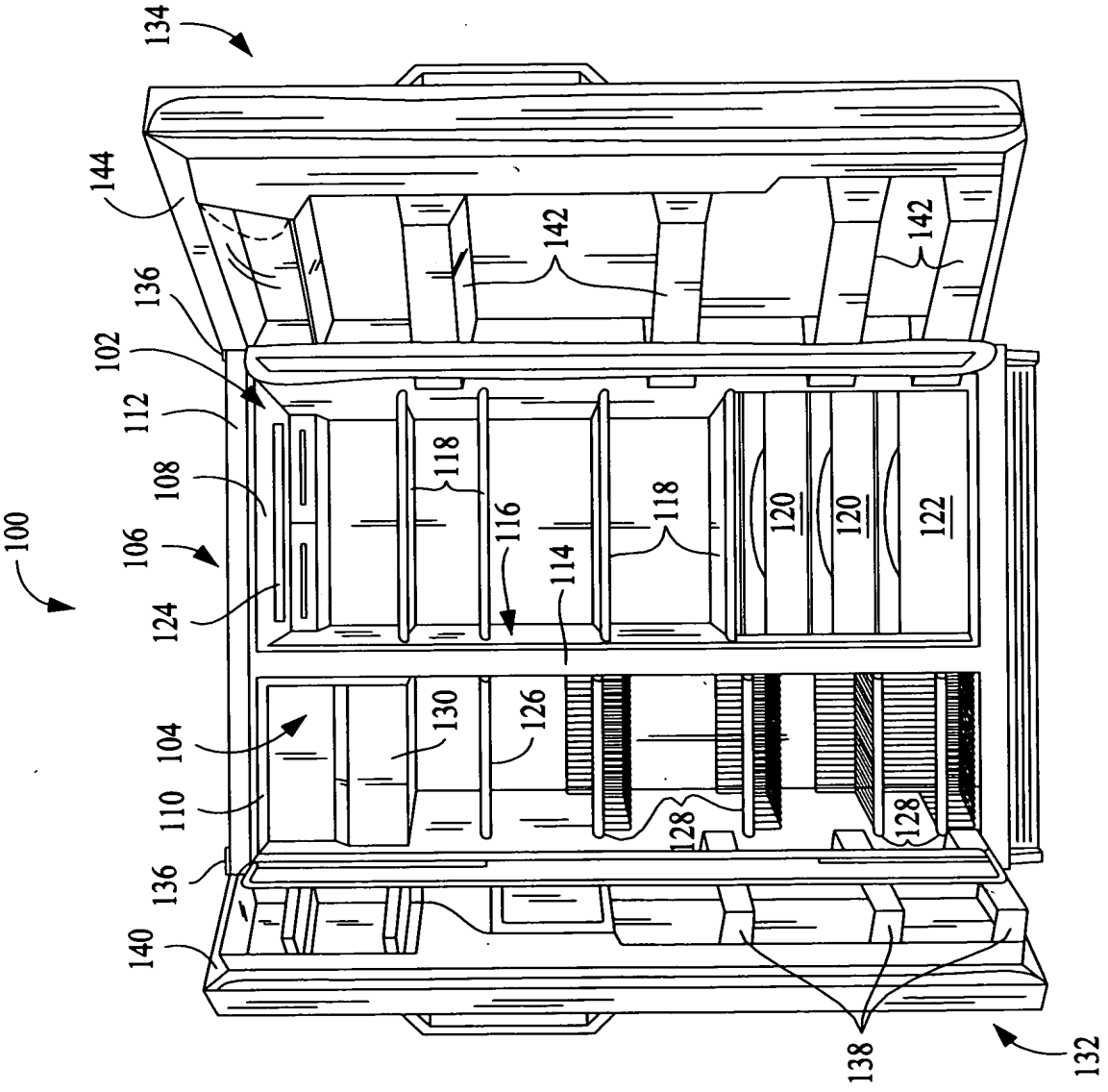

FIG. 1

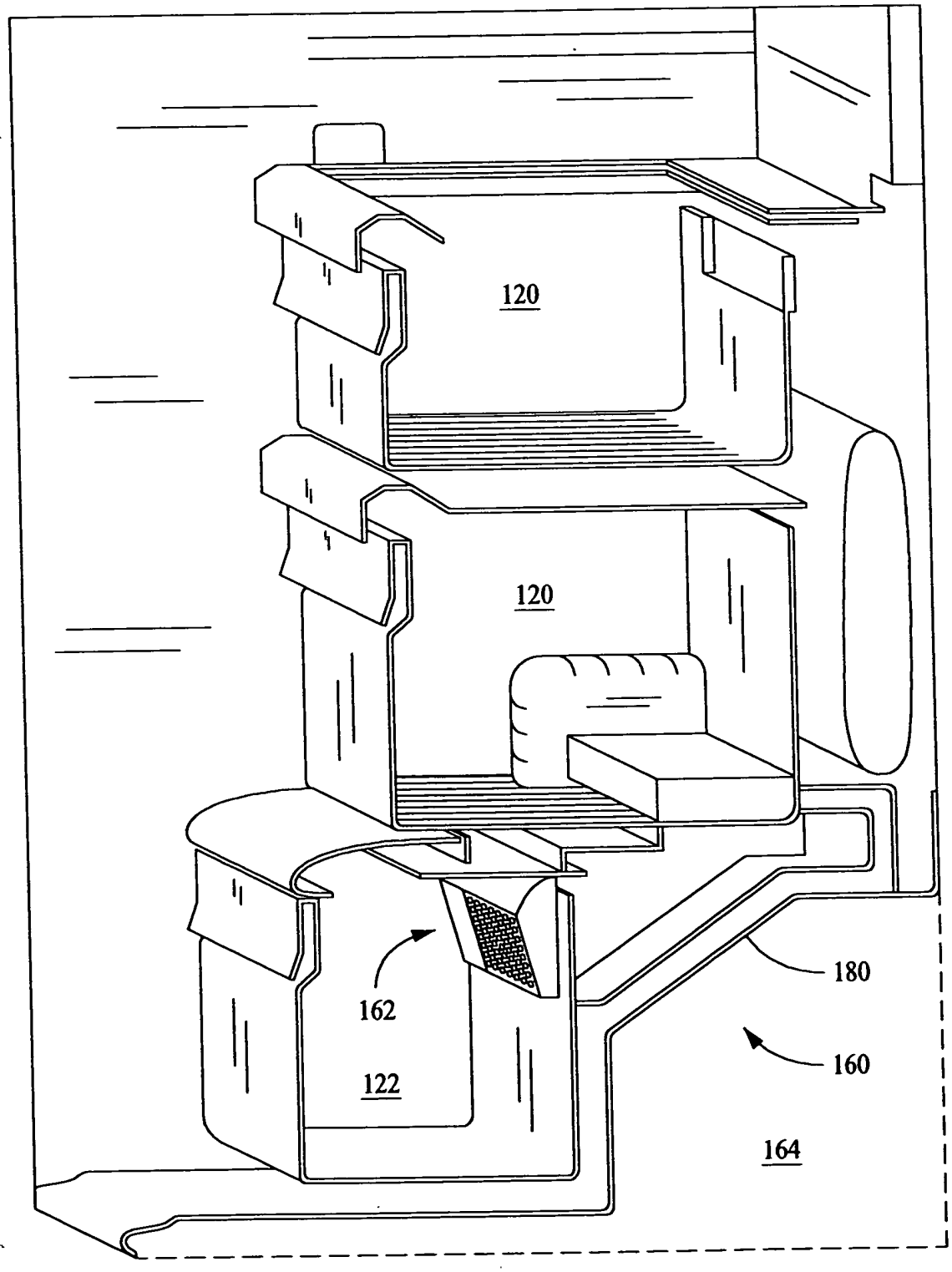

FIG. 2

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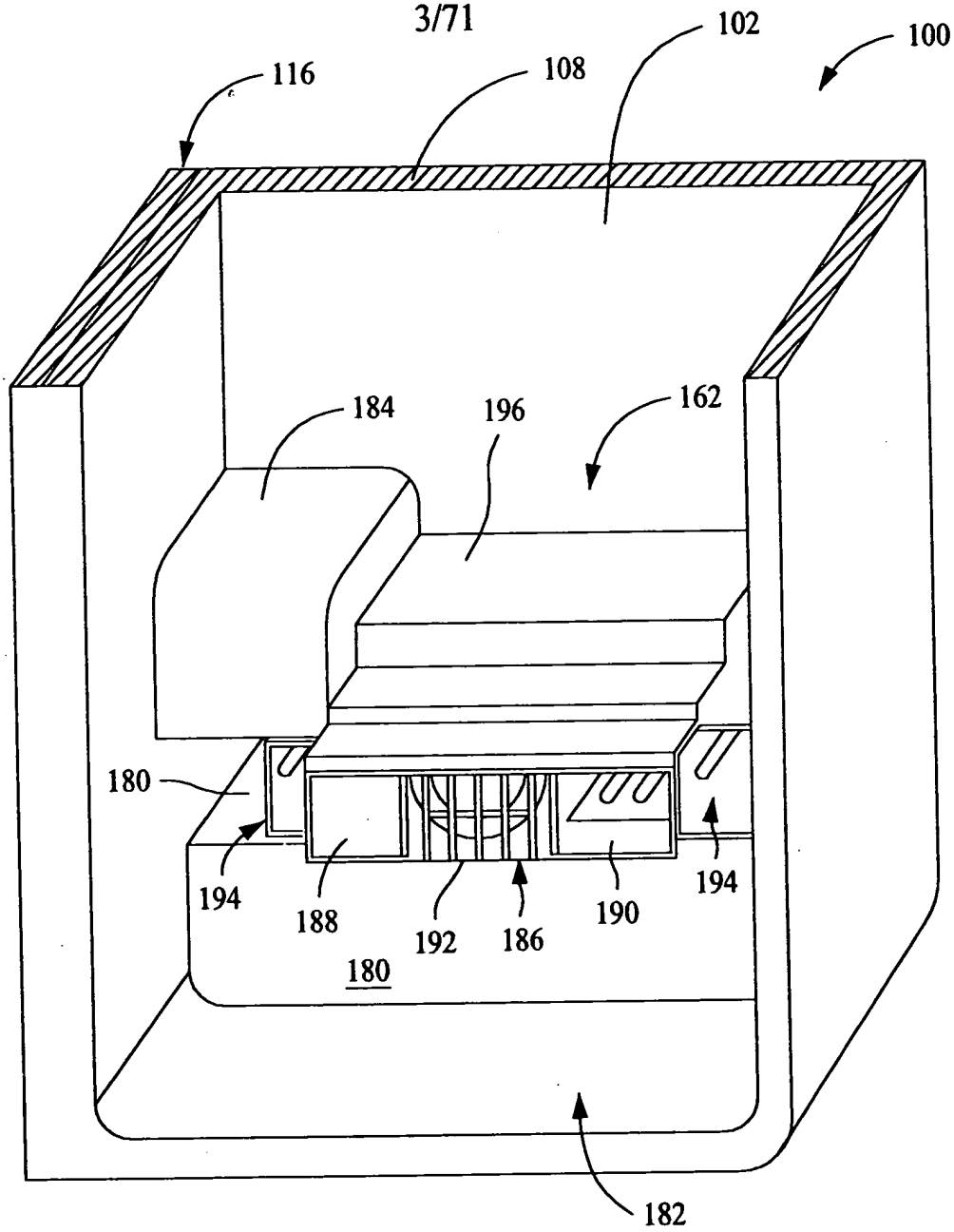


FIG. 3

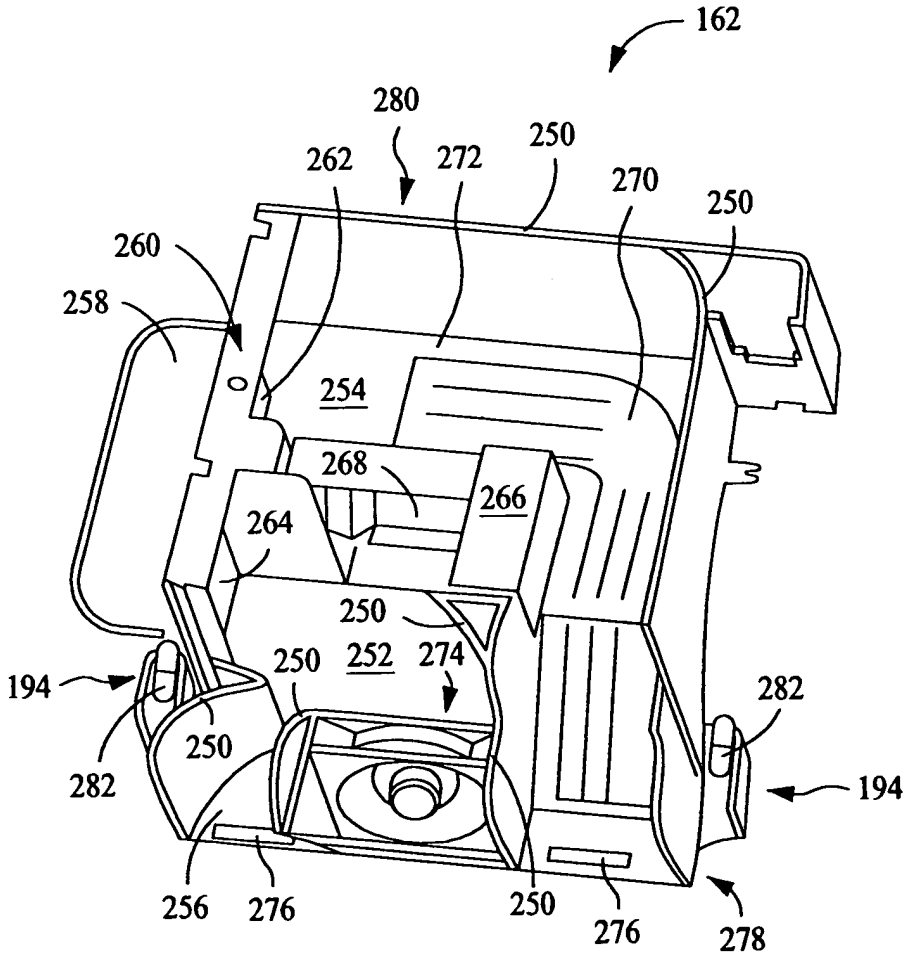


FIG. 4

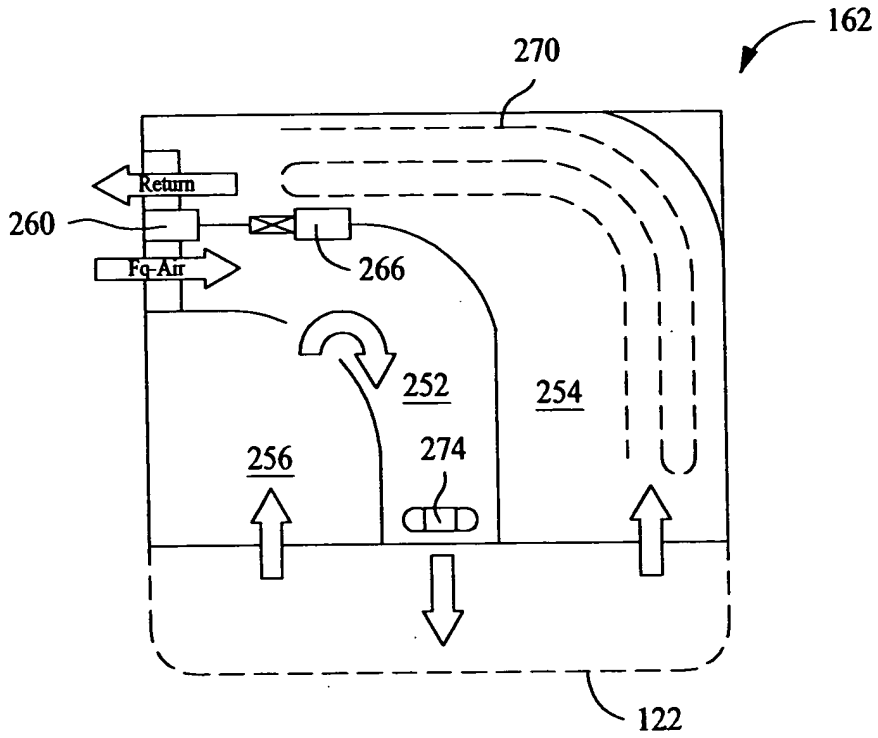


FIG. 5

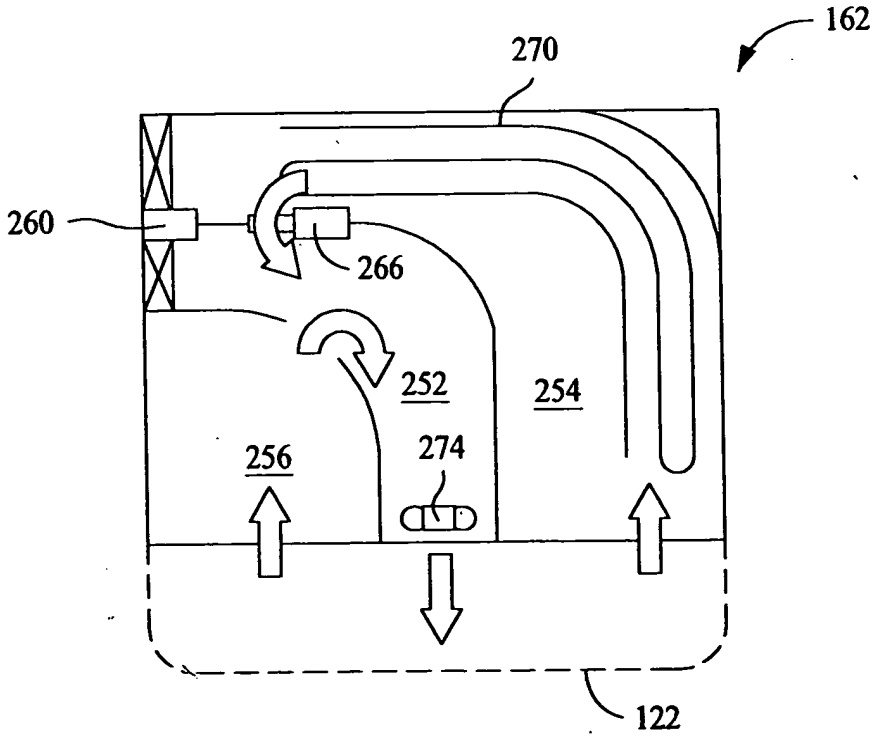


FIG. 6

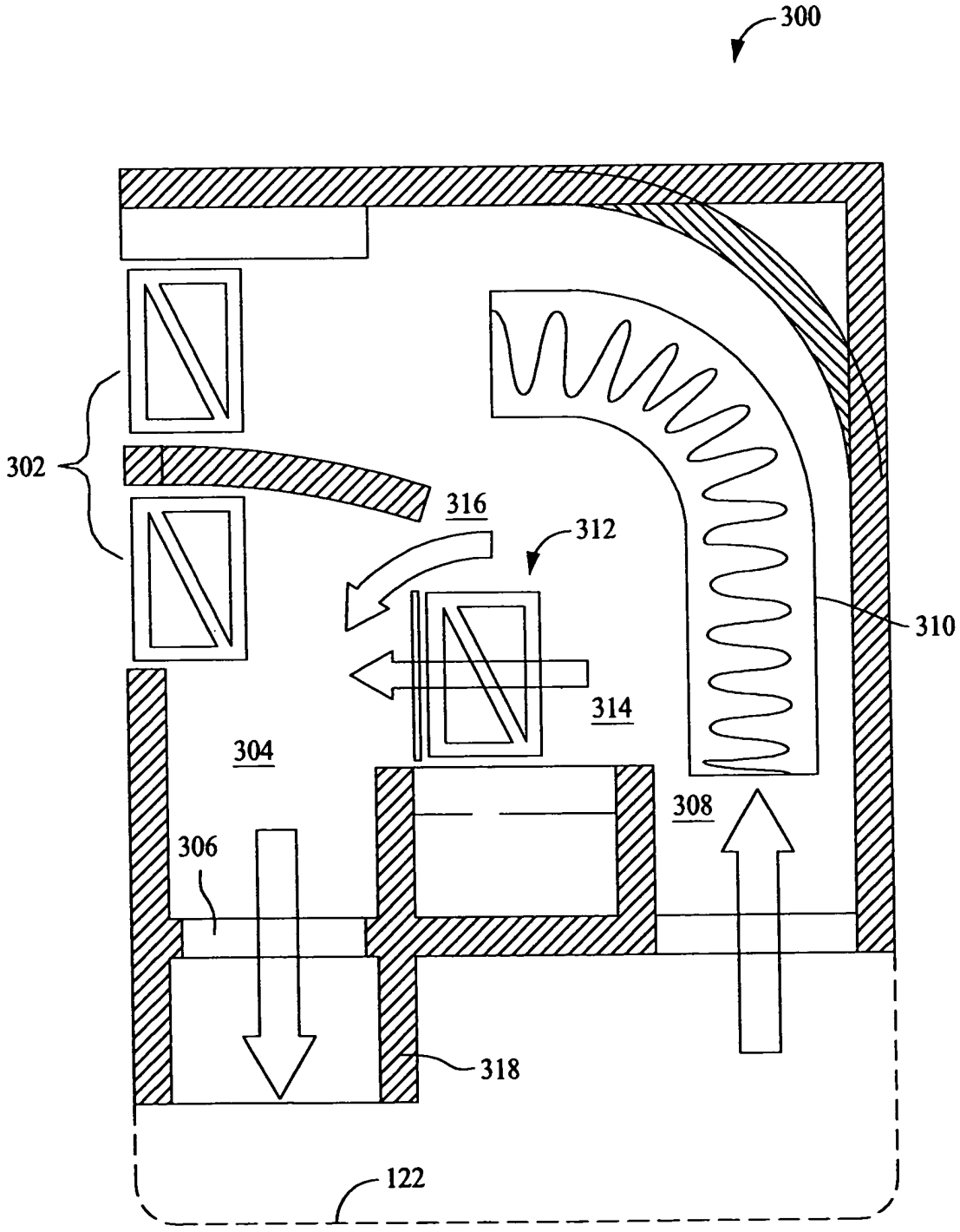


FIG. 7

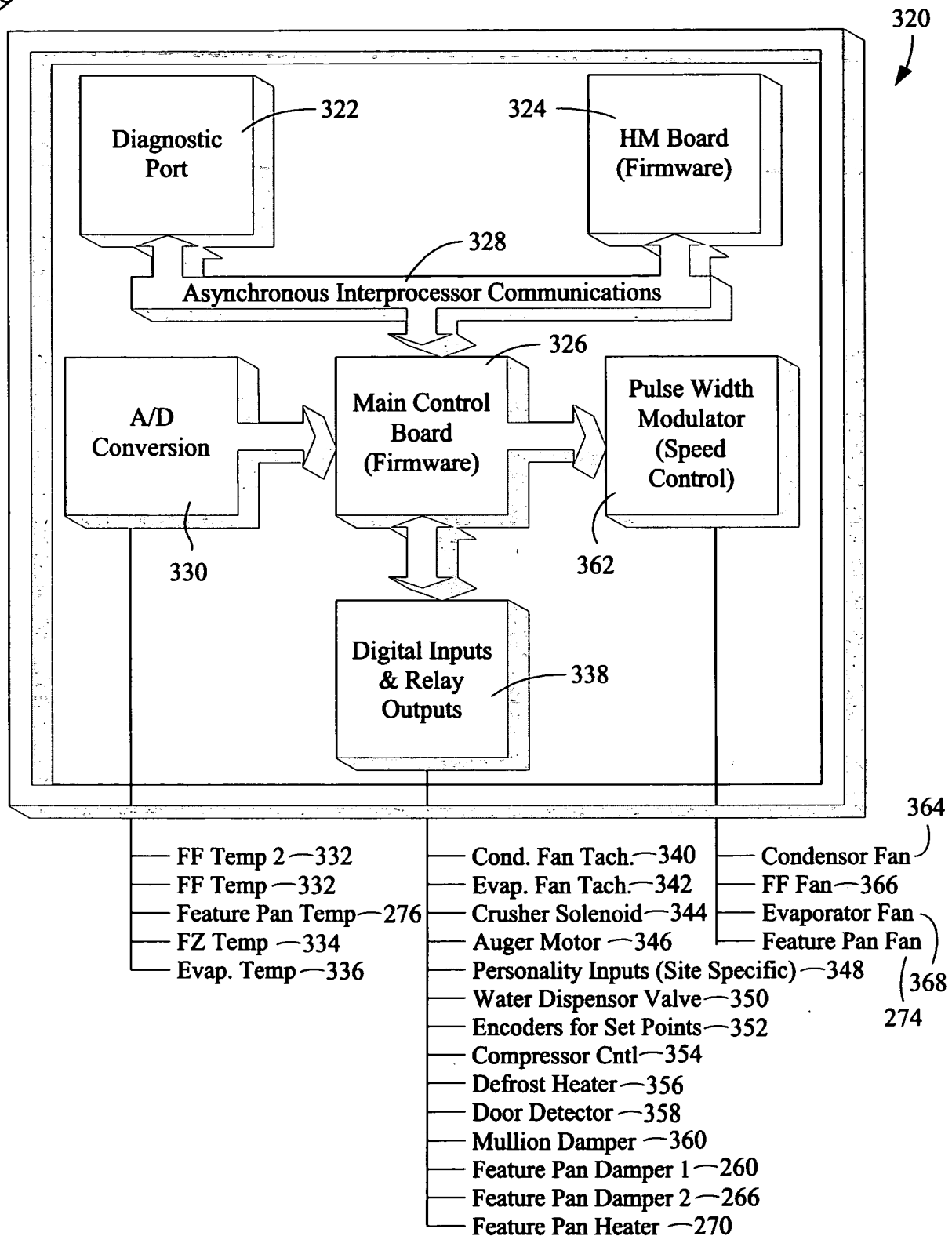


FIG. 8

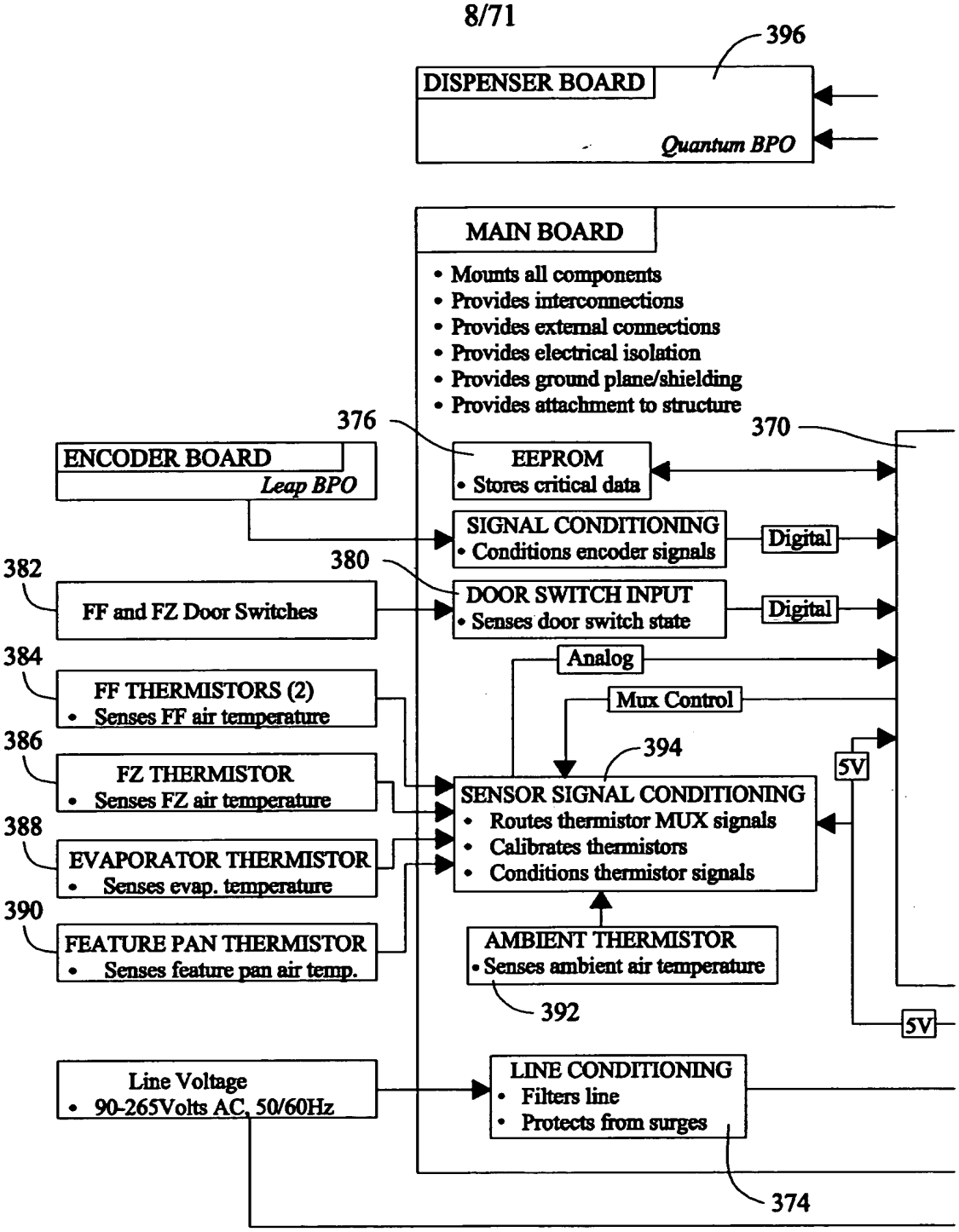


FIG. 9A

TO FIG 9B

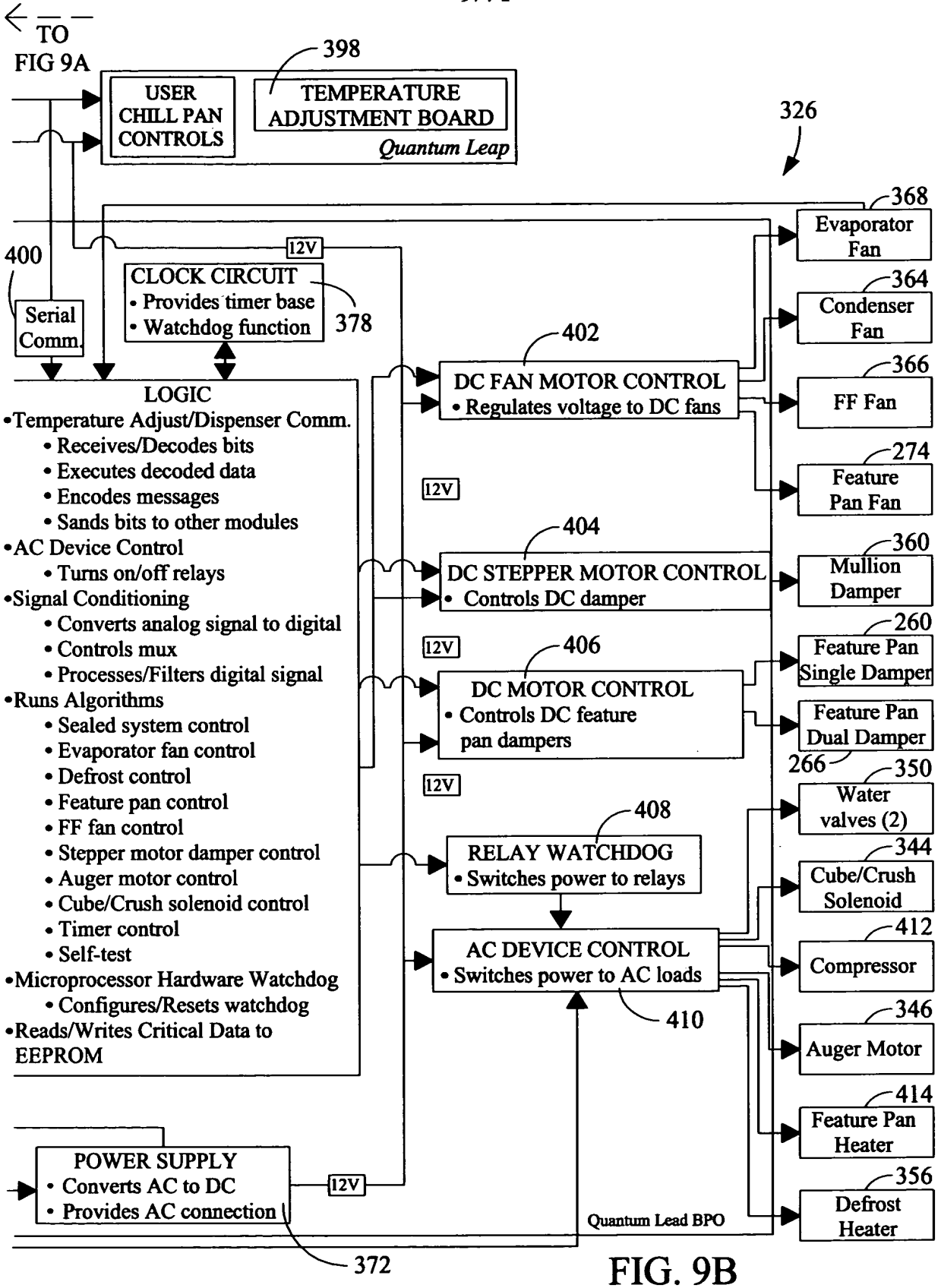


FIG. 9B

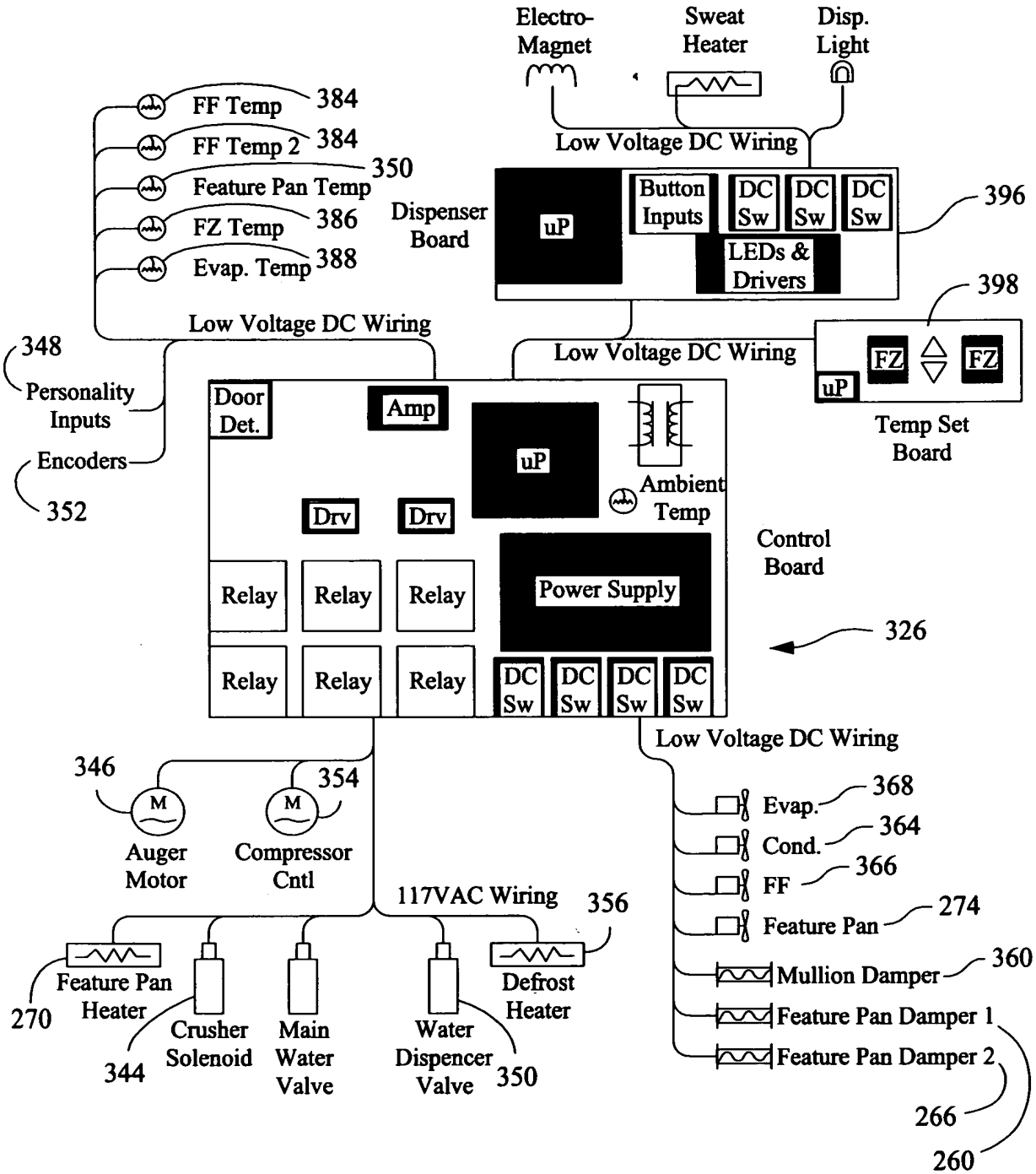


FIG. 10

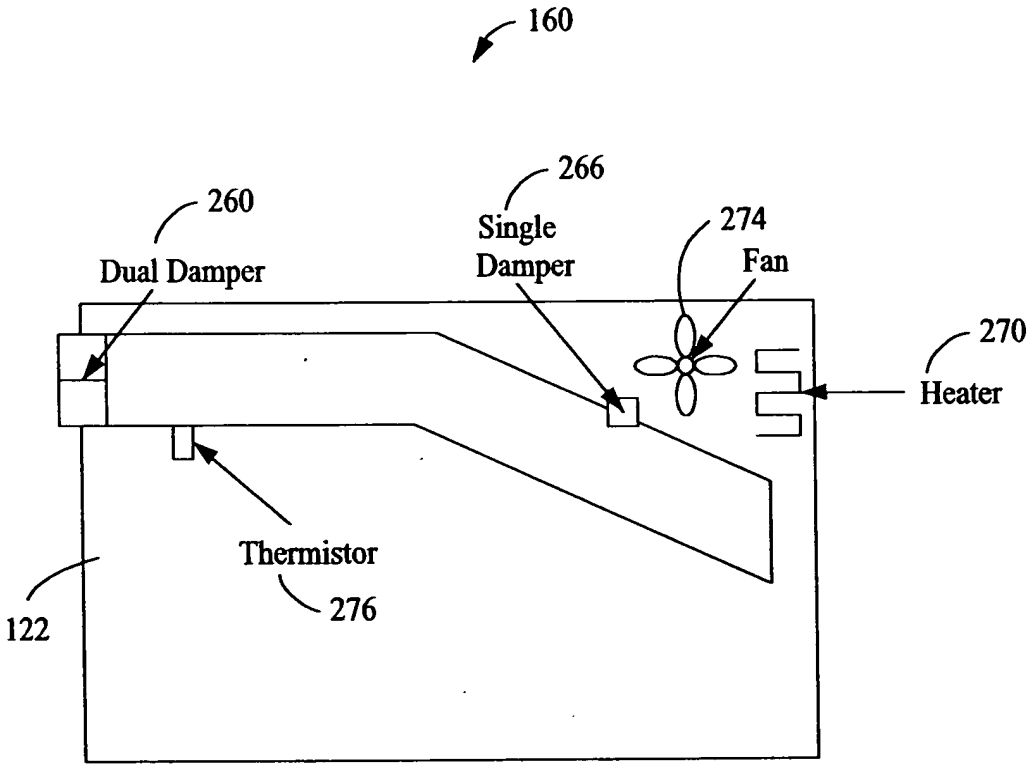


FIG. 11

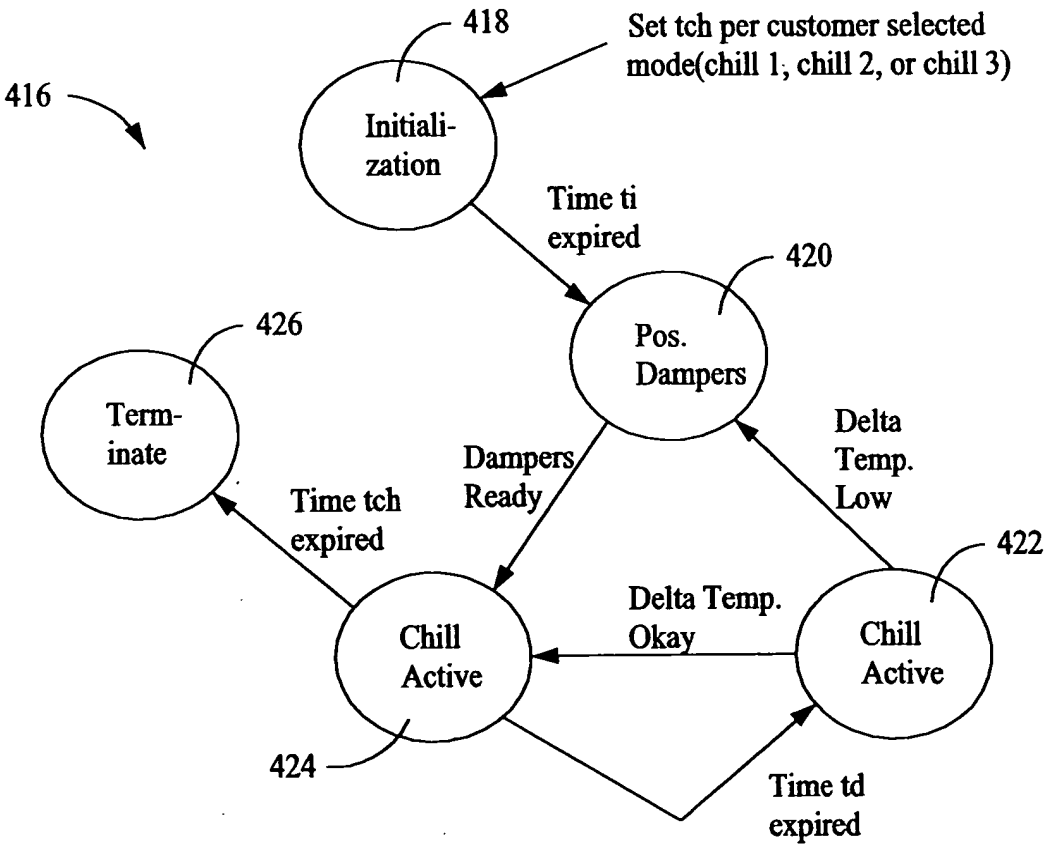
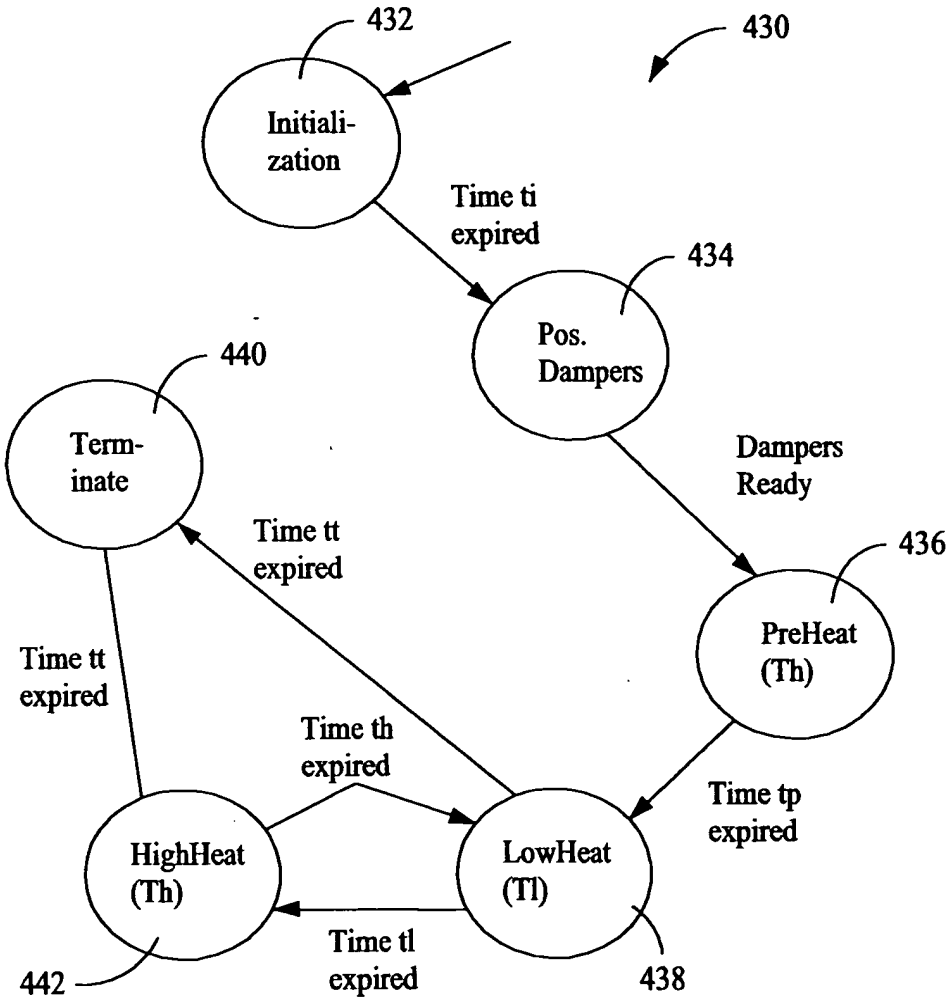


FIG. 12



Initialization: Shuts off heater and turns on fan. This mode is implemented so that the customer interface LED that is wired in parallel with the fan will turn on as soon as the button is hit. Time ti is the initialization time and will typically be approximately one minute.

Pos. Dampers: This state shuts off the fan, sets the single damper open then closes the dual damper. It then turns the fan back on. This is done for power management

PreHeat: This state regulates the pan temperature

LowHeat

HighHeat:

Terminate: This mode closes both dampers and shuts off the fan then returns to idle.

FIG. 13

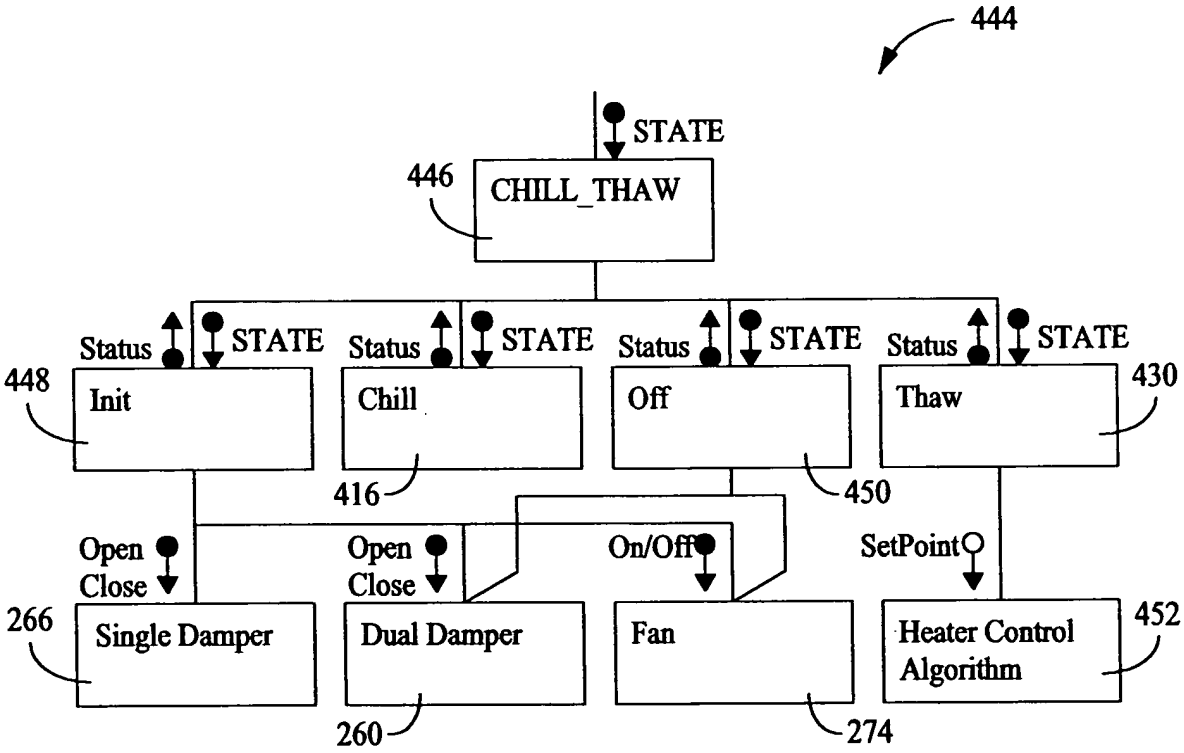


FIG. 14

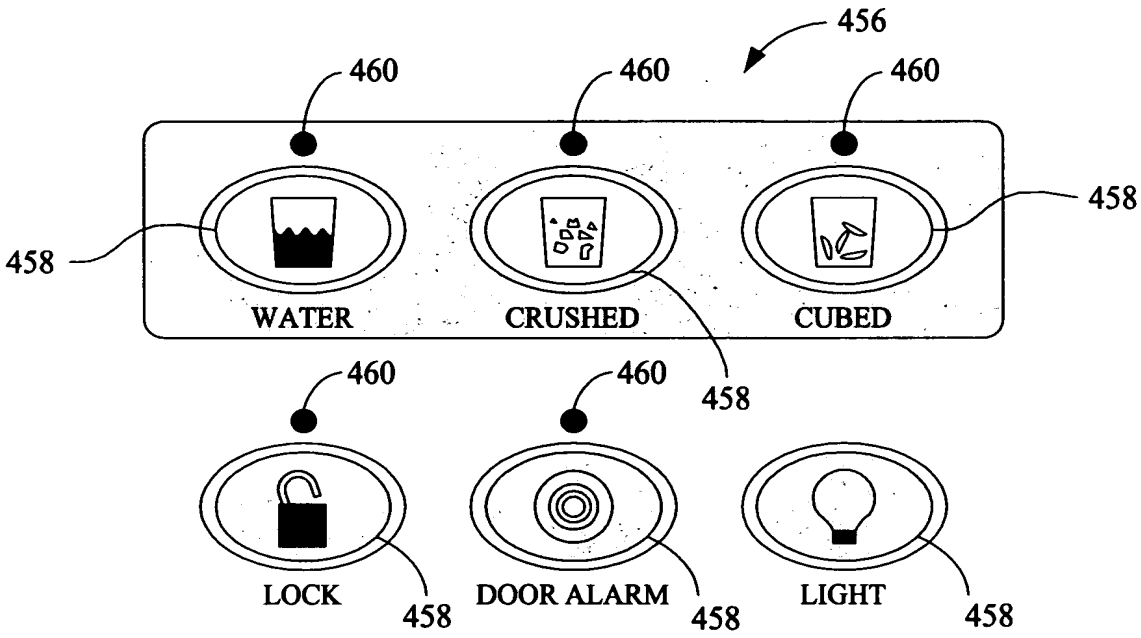


FIG. 15

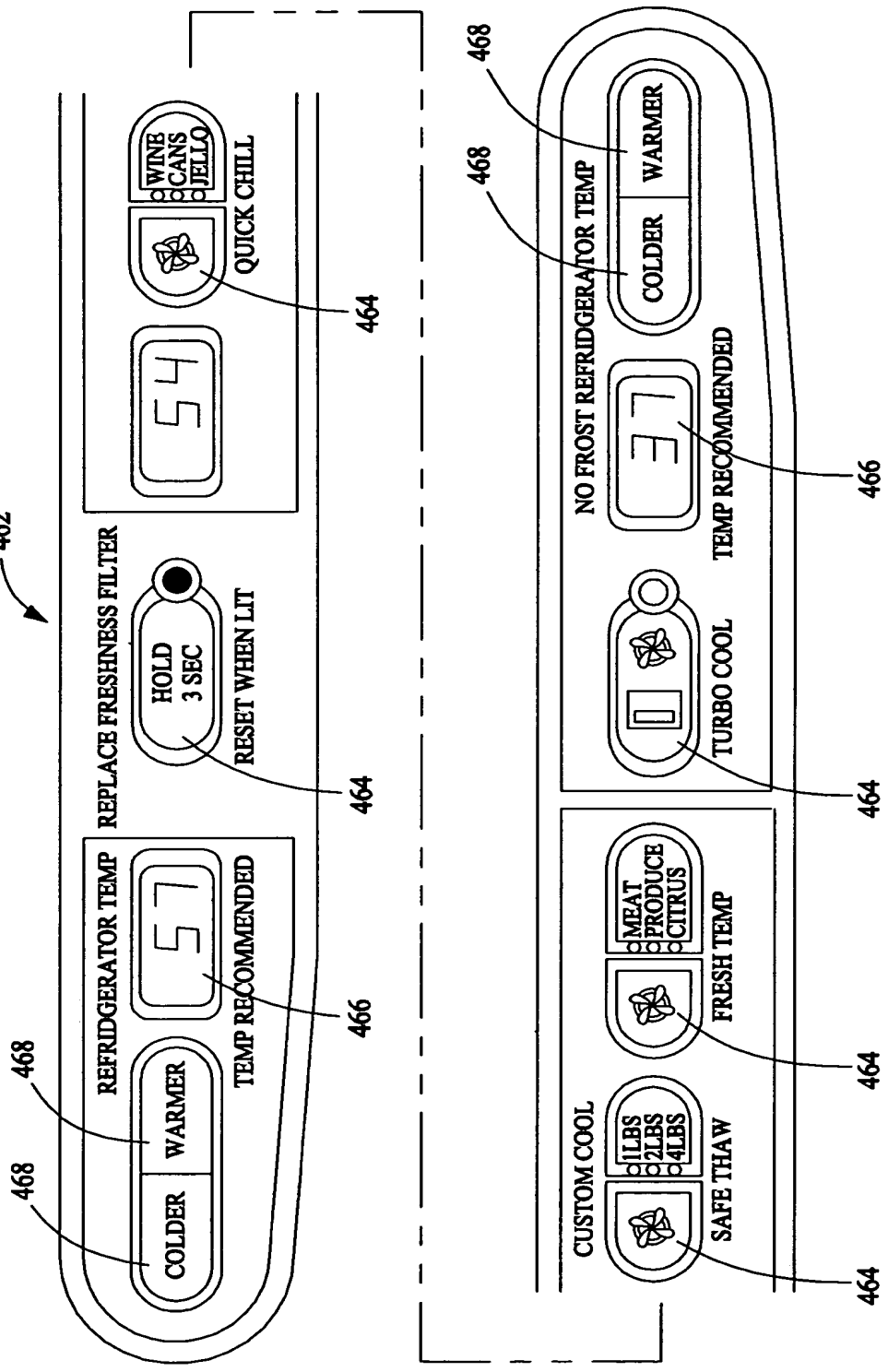


FIG. 16

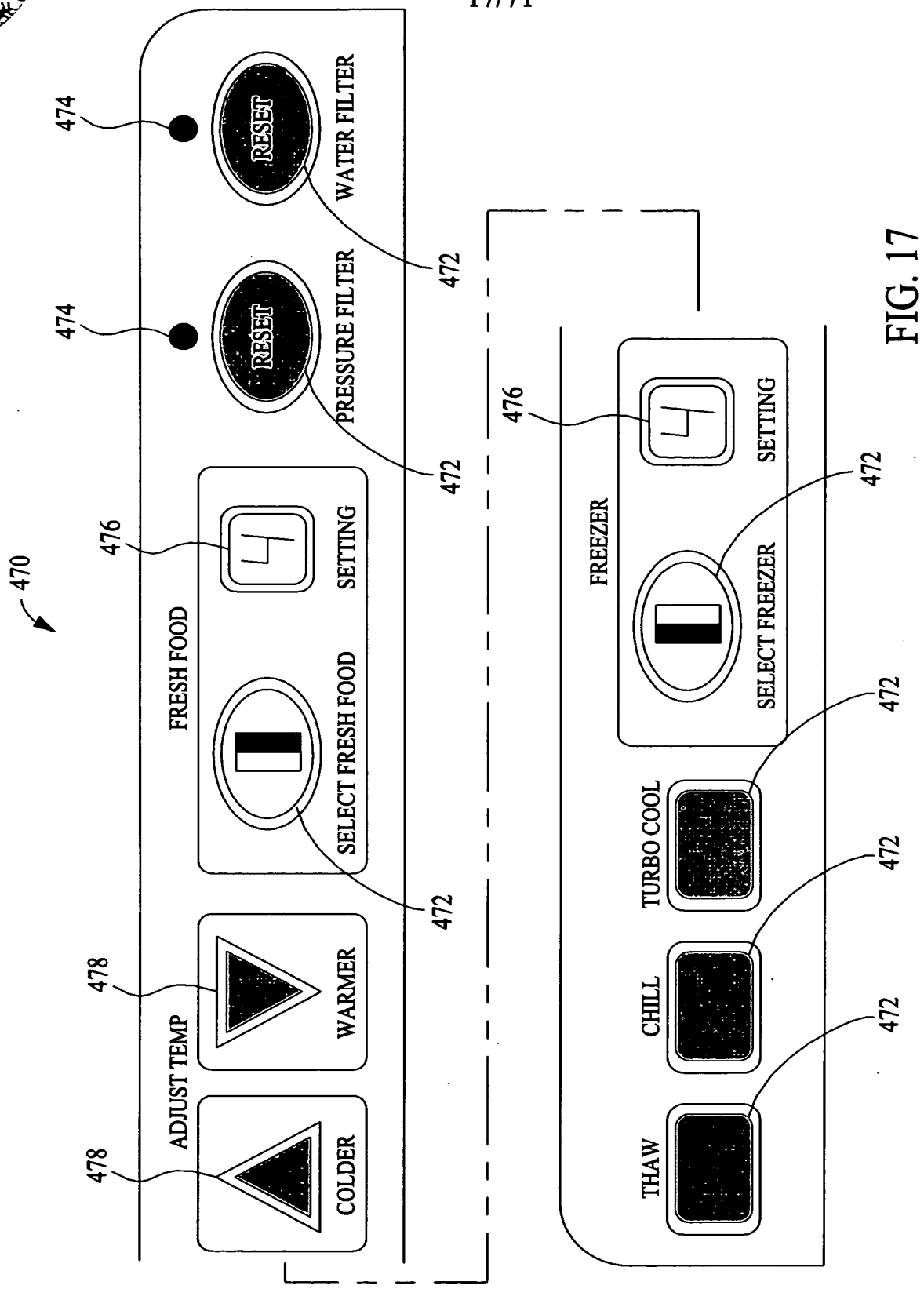
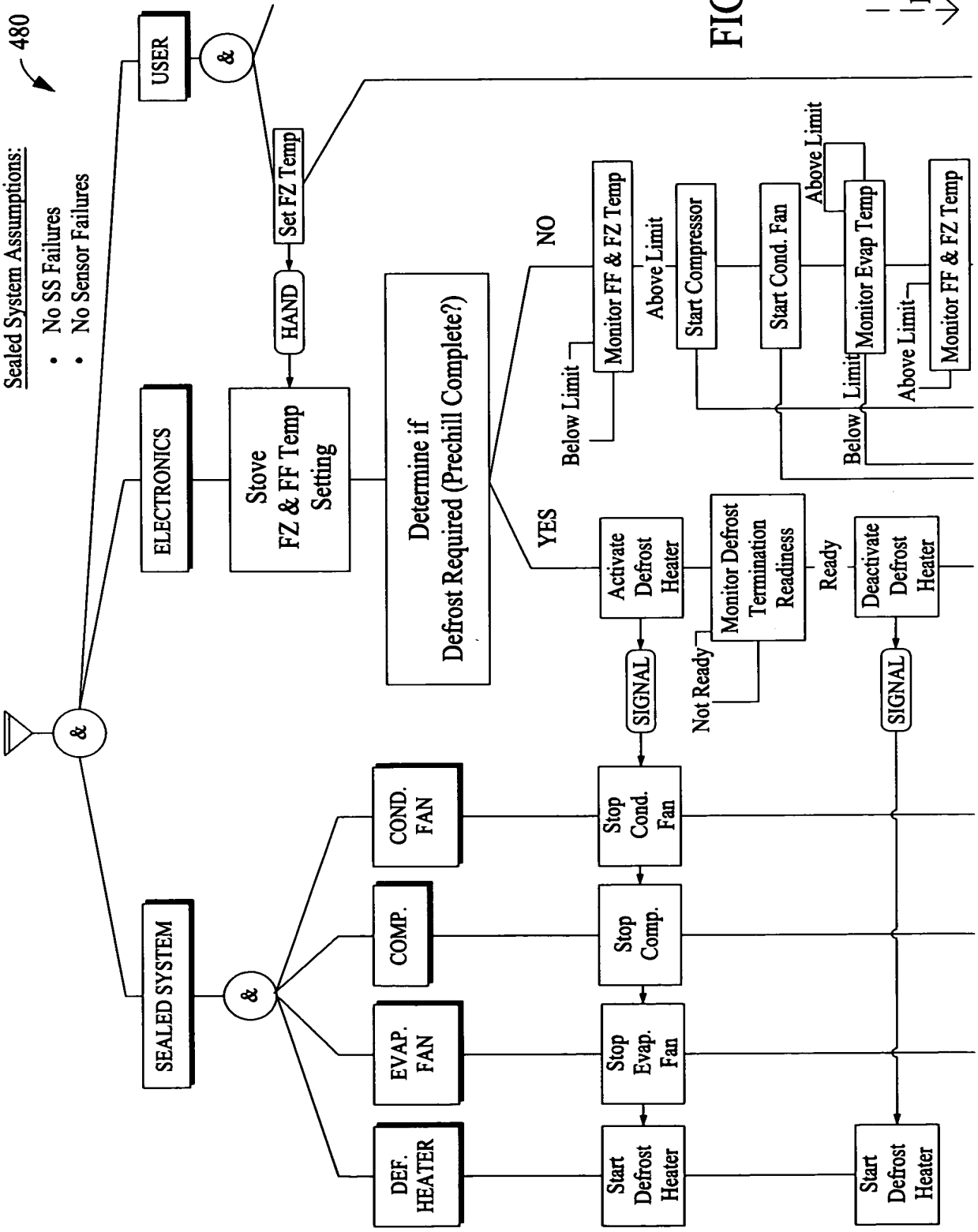


FIG. 17

FIG. 18A



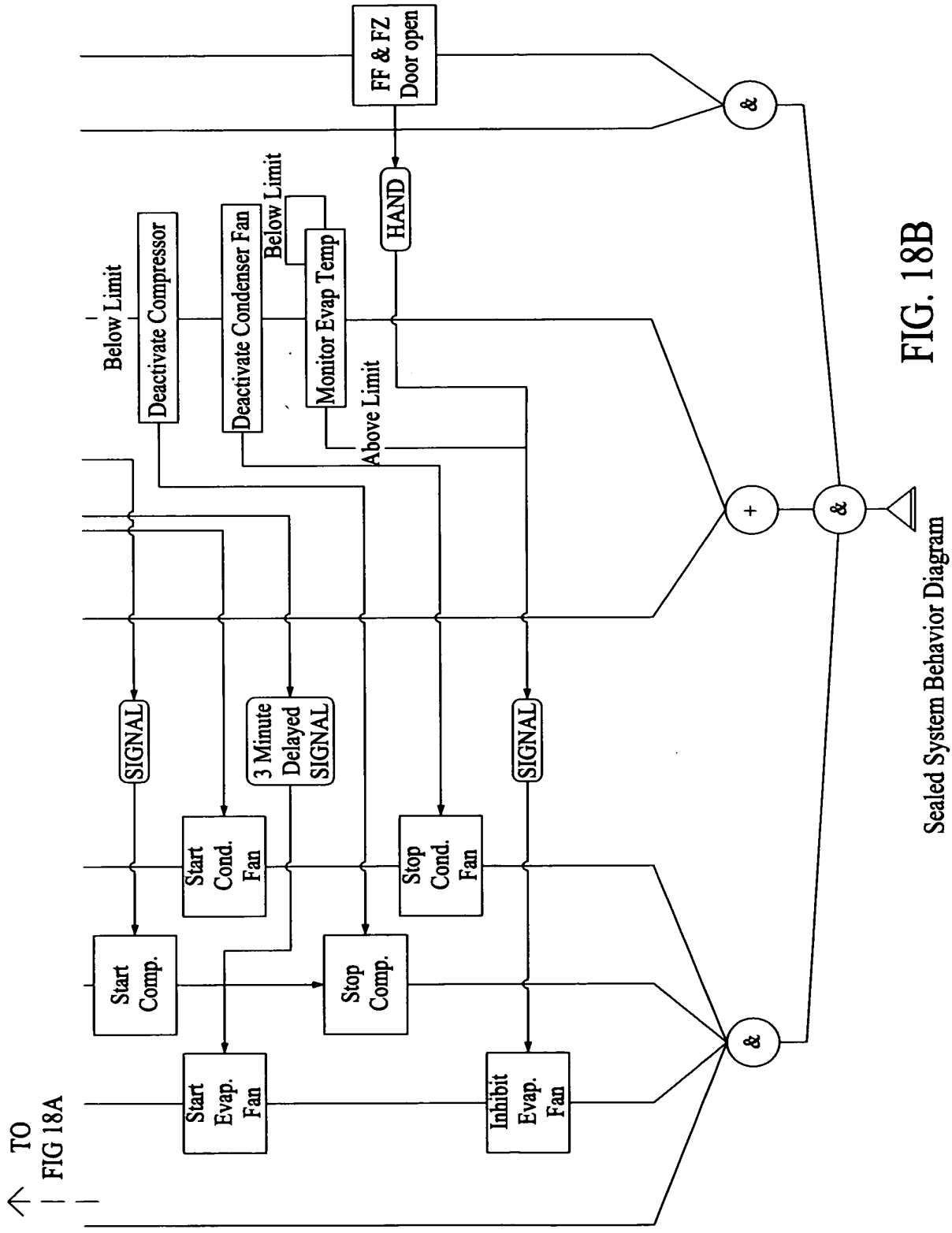
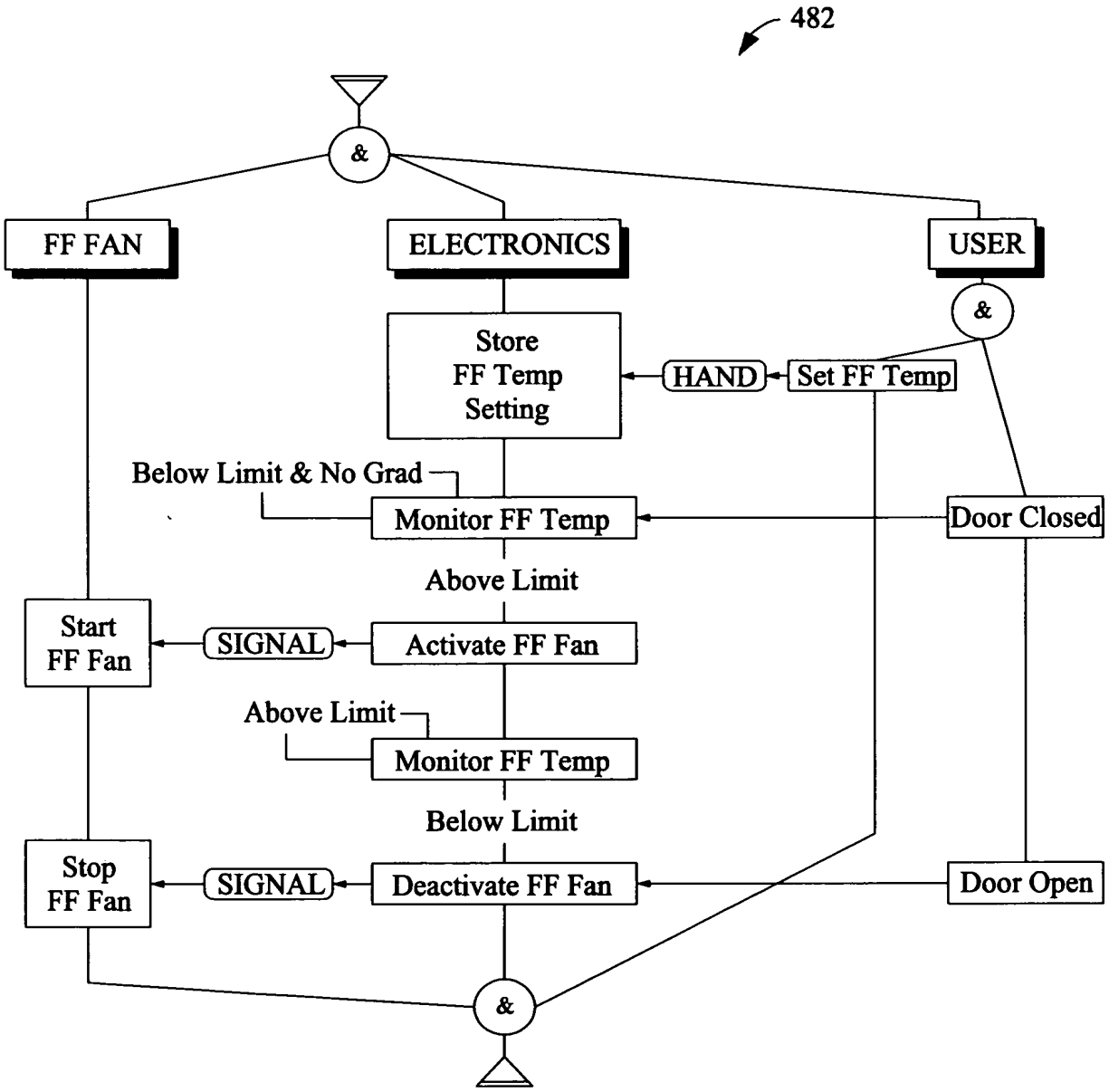
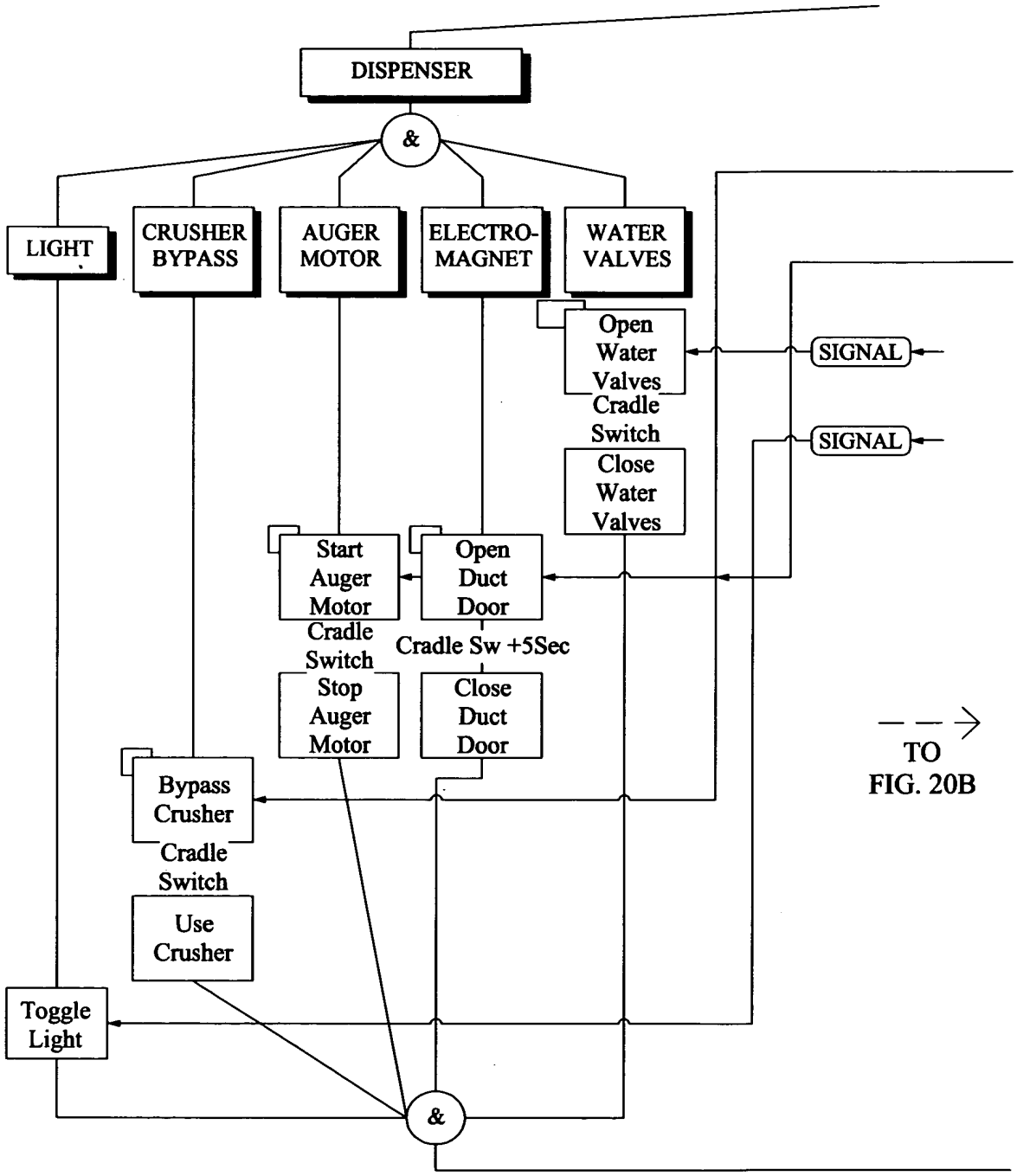


FIG. 18B



Fresh Food Fan Behavior Diagram

FIG. 19



Dispenser Behavior

FIG. 20A

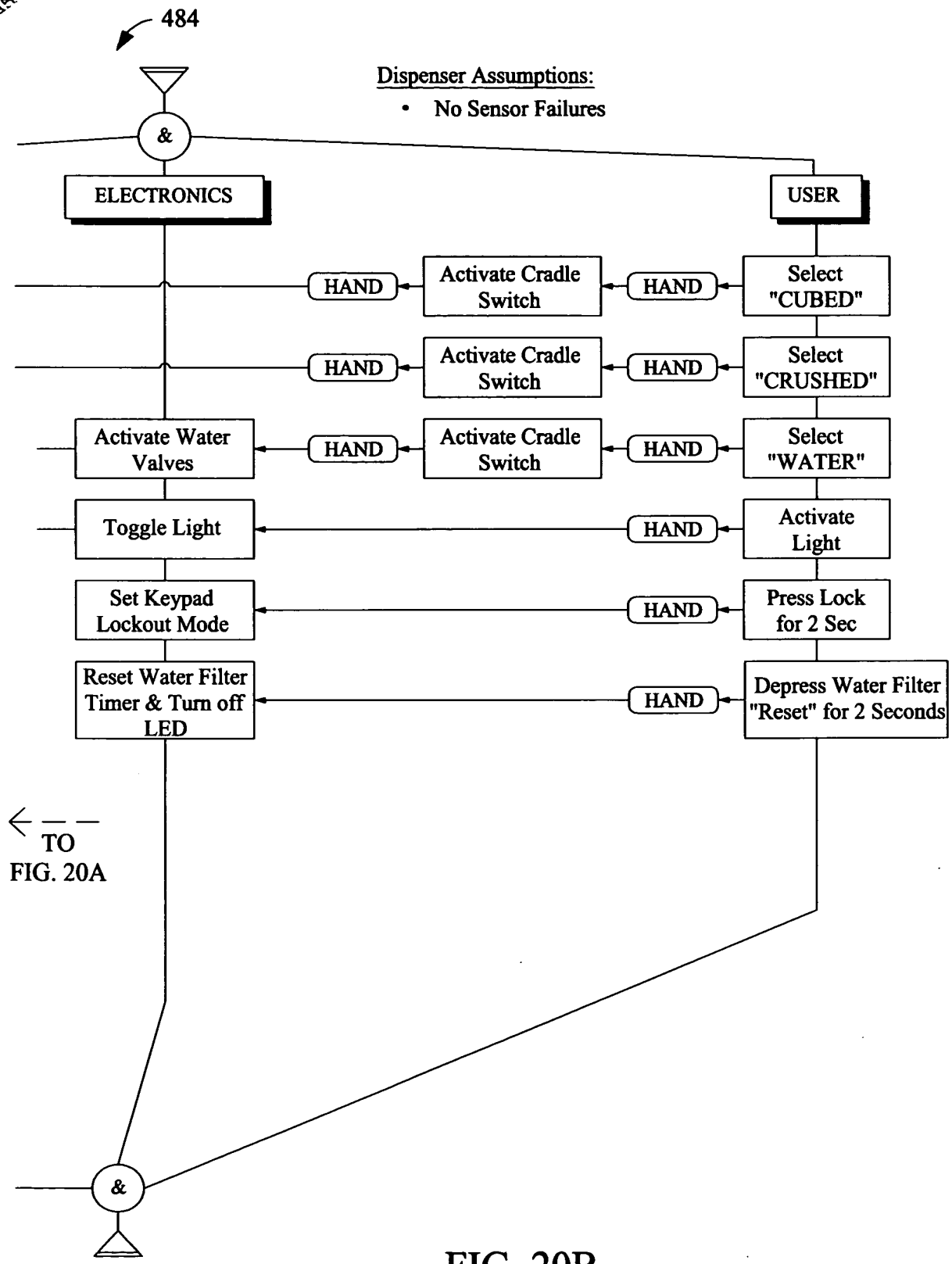


FIG. 20B

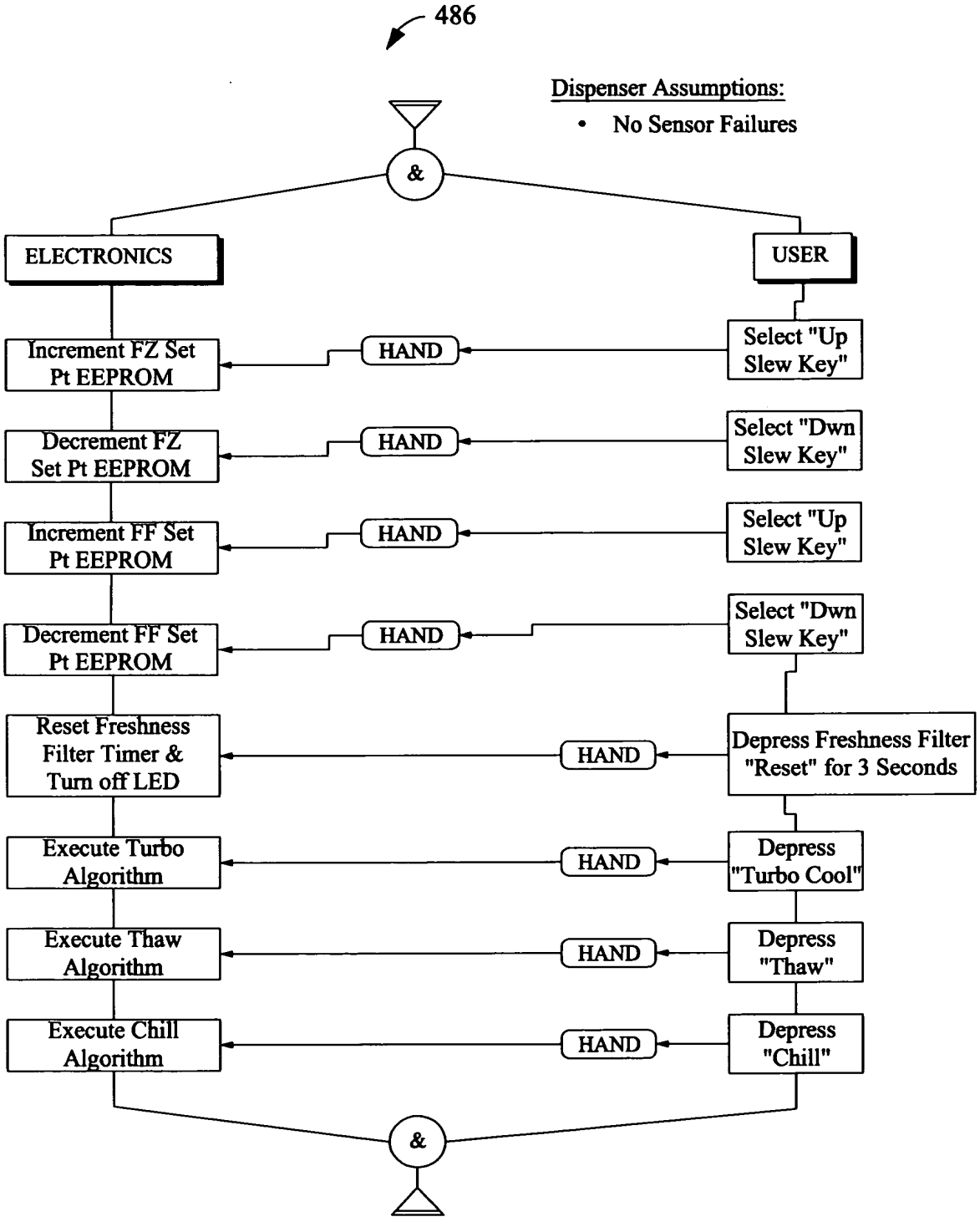


FIG. 21

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St. Louis, MO 63102 (314) 621-5070

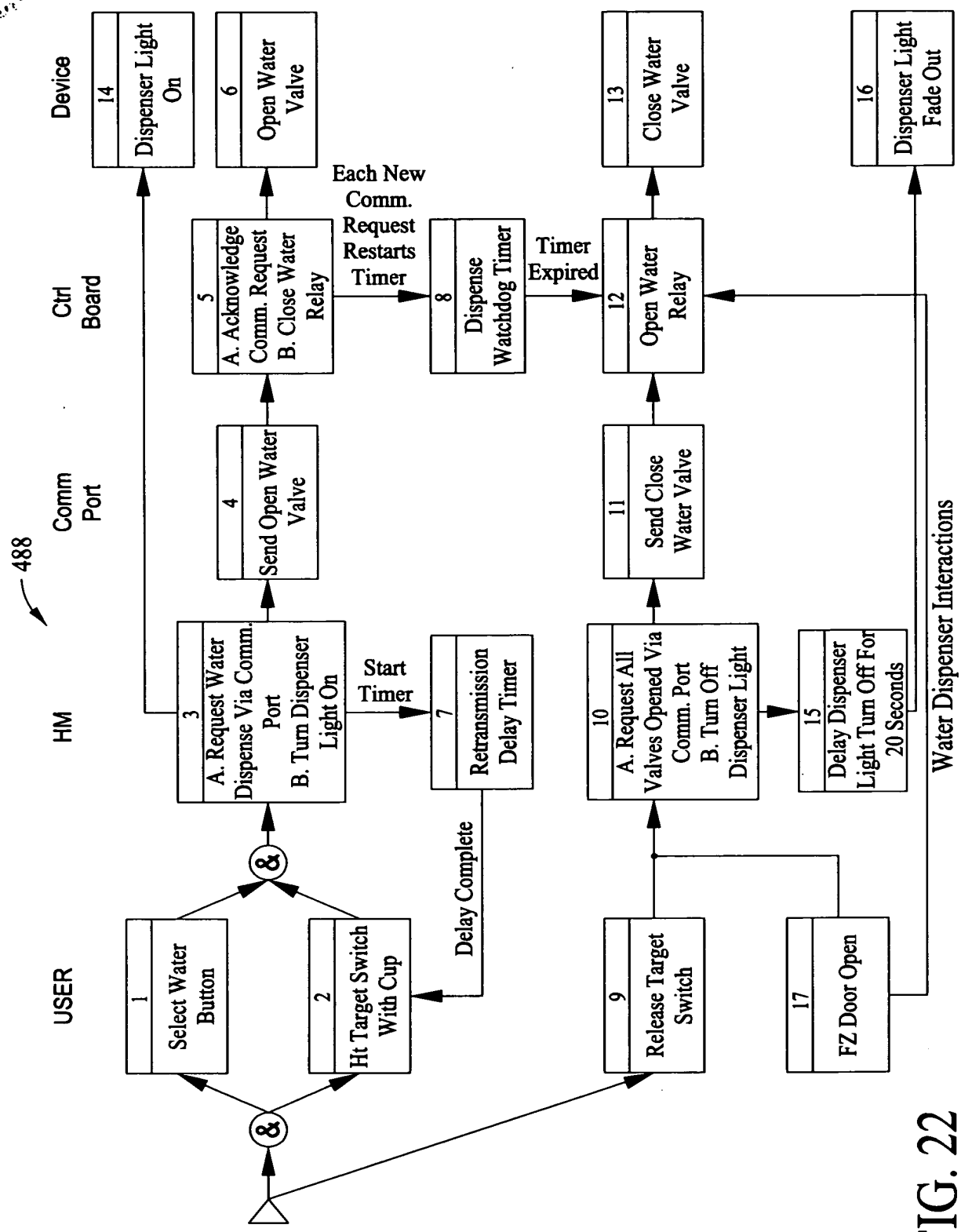

FIG. 22

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St. Louis, MO 63102 (314) 621-5070

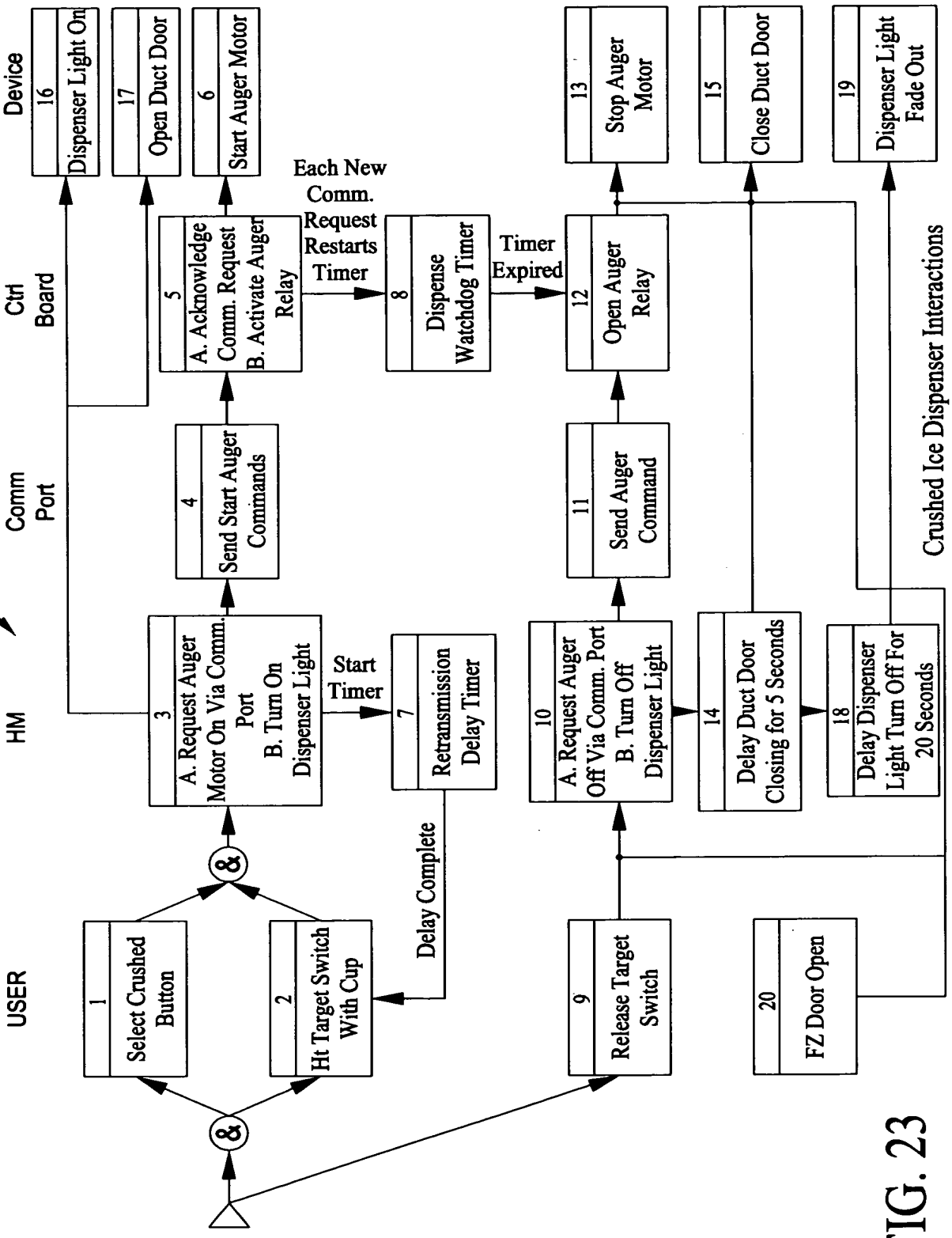

FIG. 23

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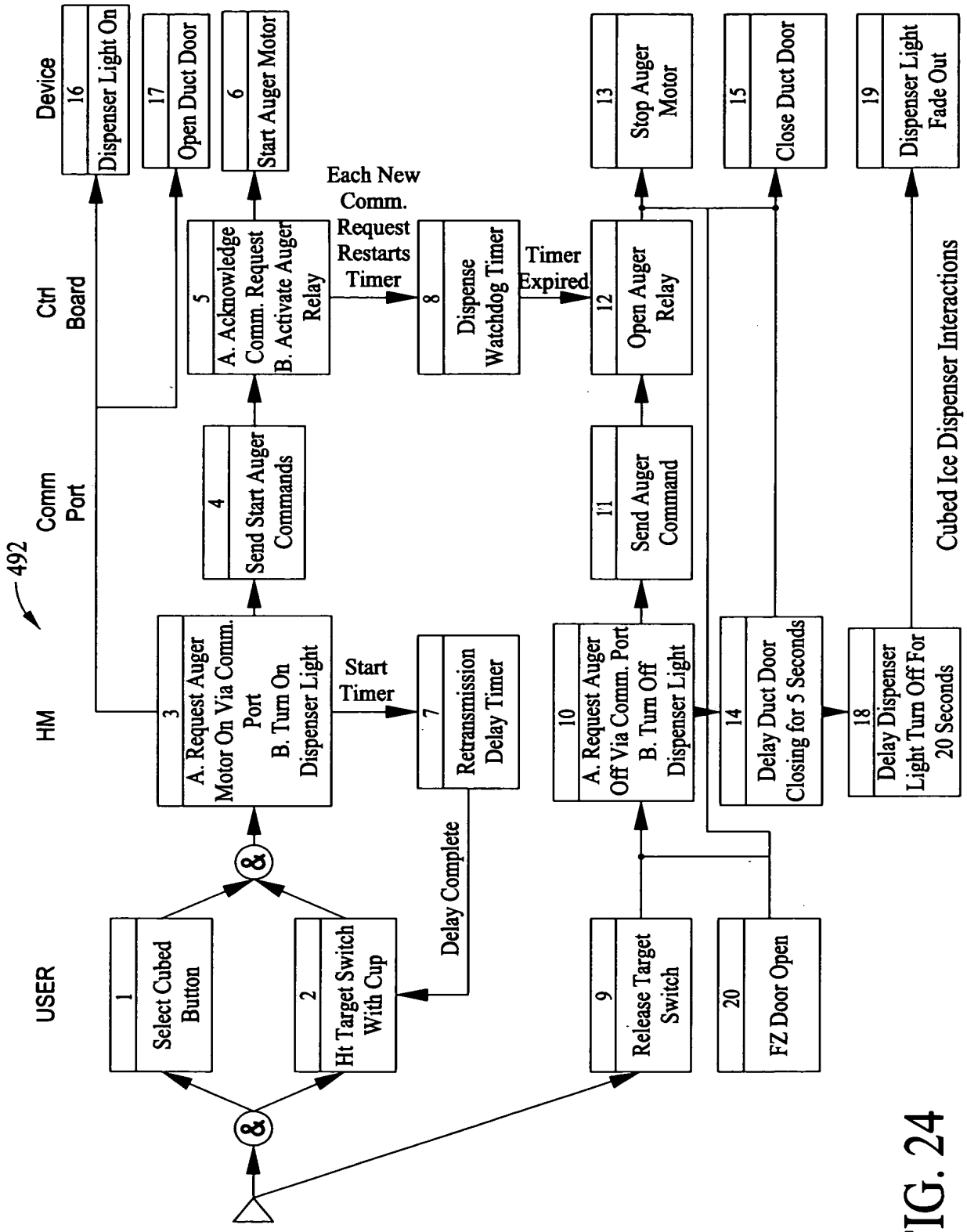
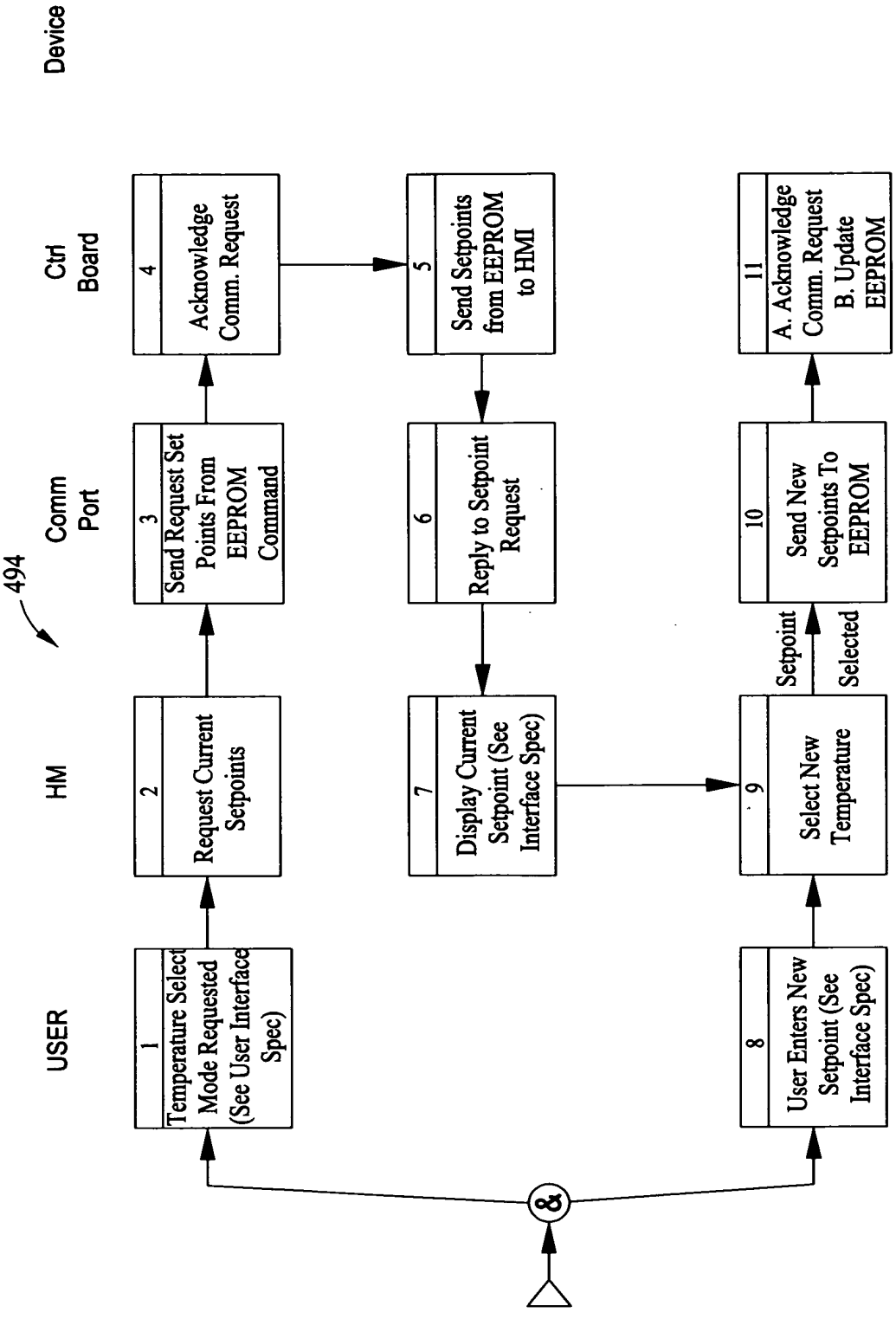


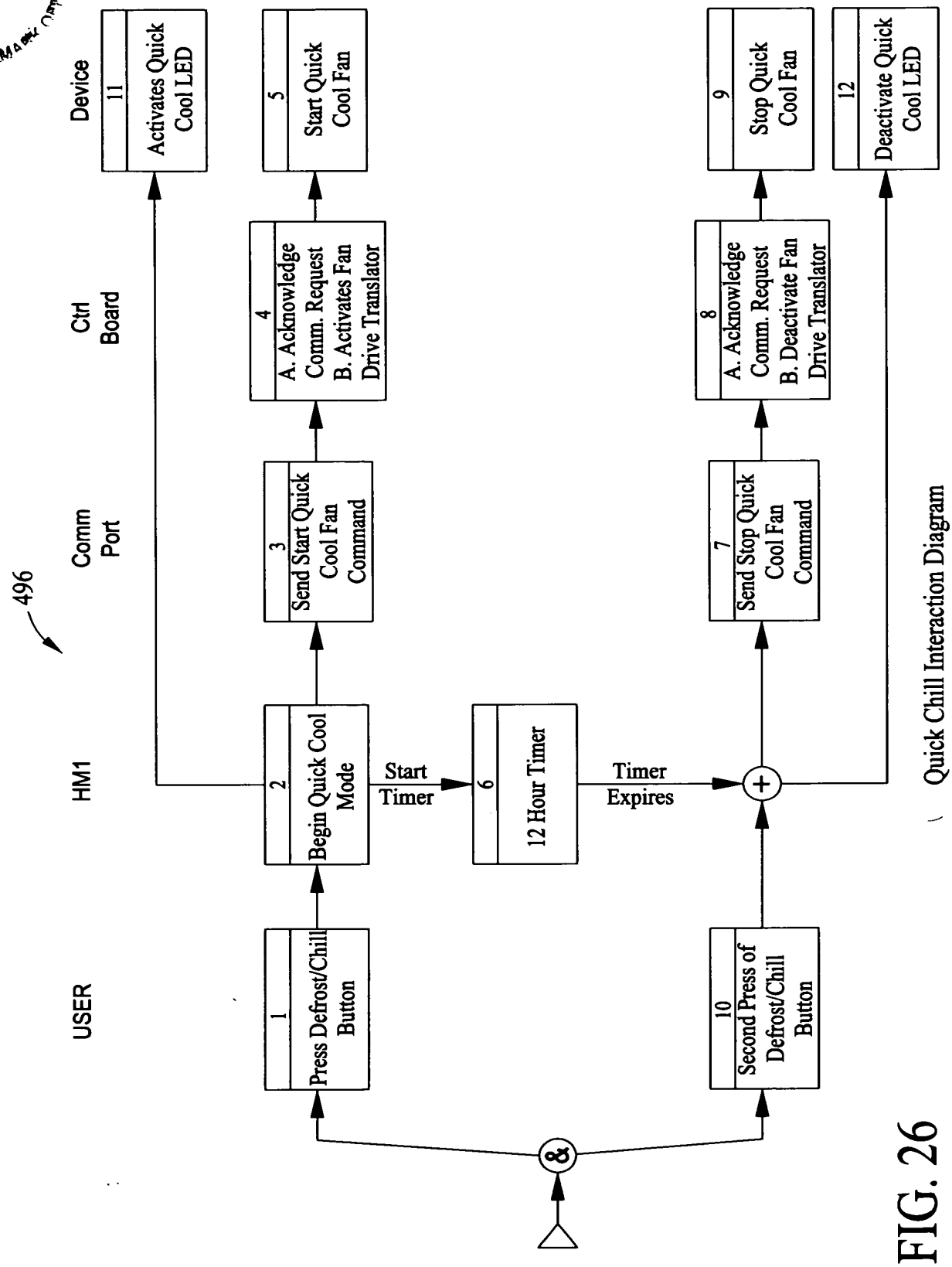
FIG. 24



NOTE: Setpoint Selected implies that the final selection has been made and that the selection has timed out.

Temperature Setting Interaction Diagrams

FIG. 25



Quick Chill Interaction Diagram

FIG. 26

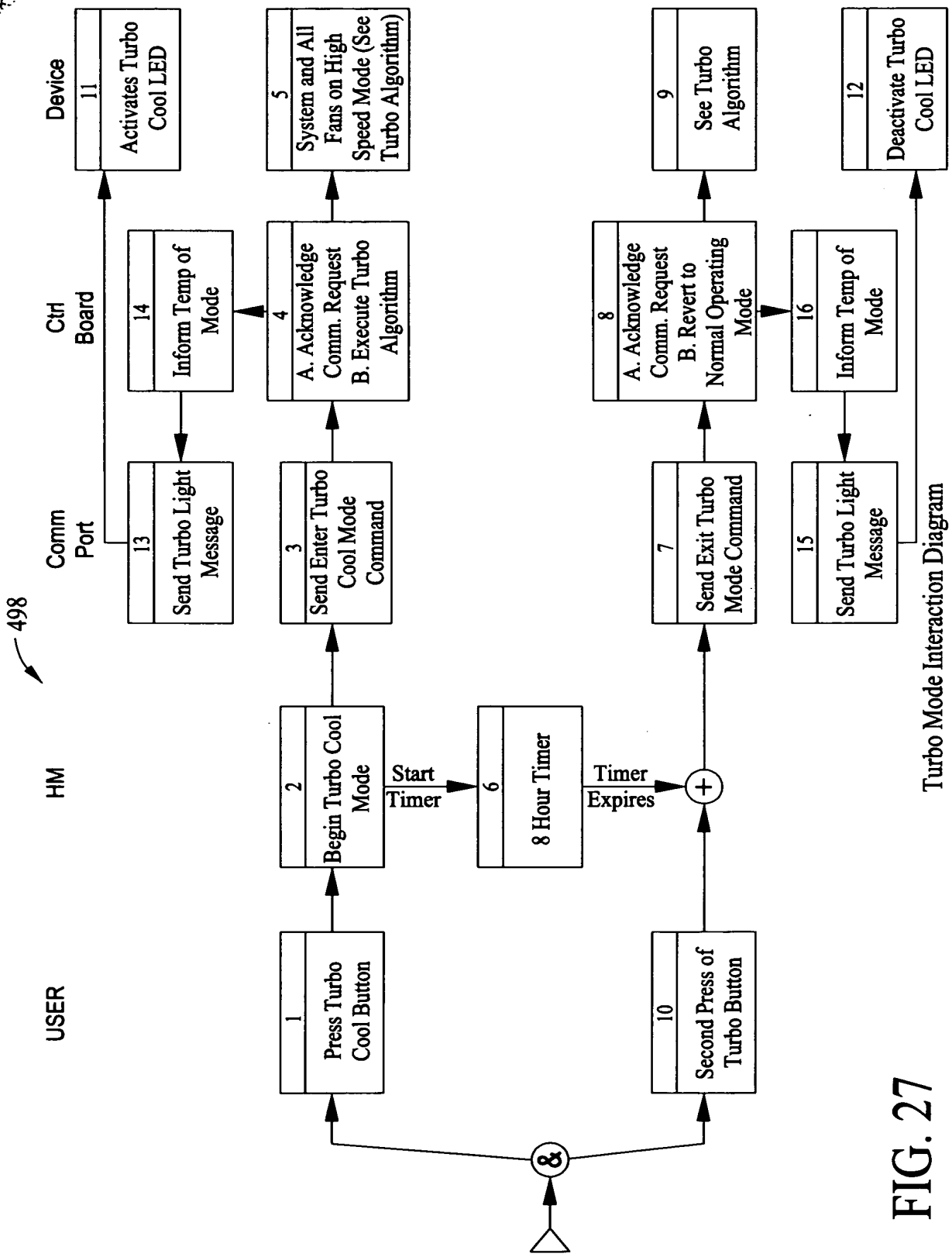


FIG. 27

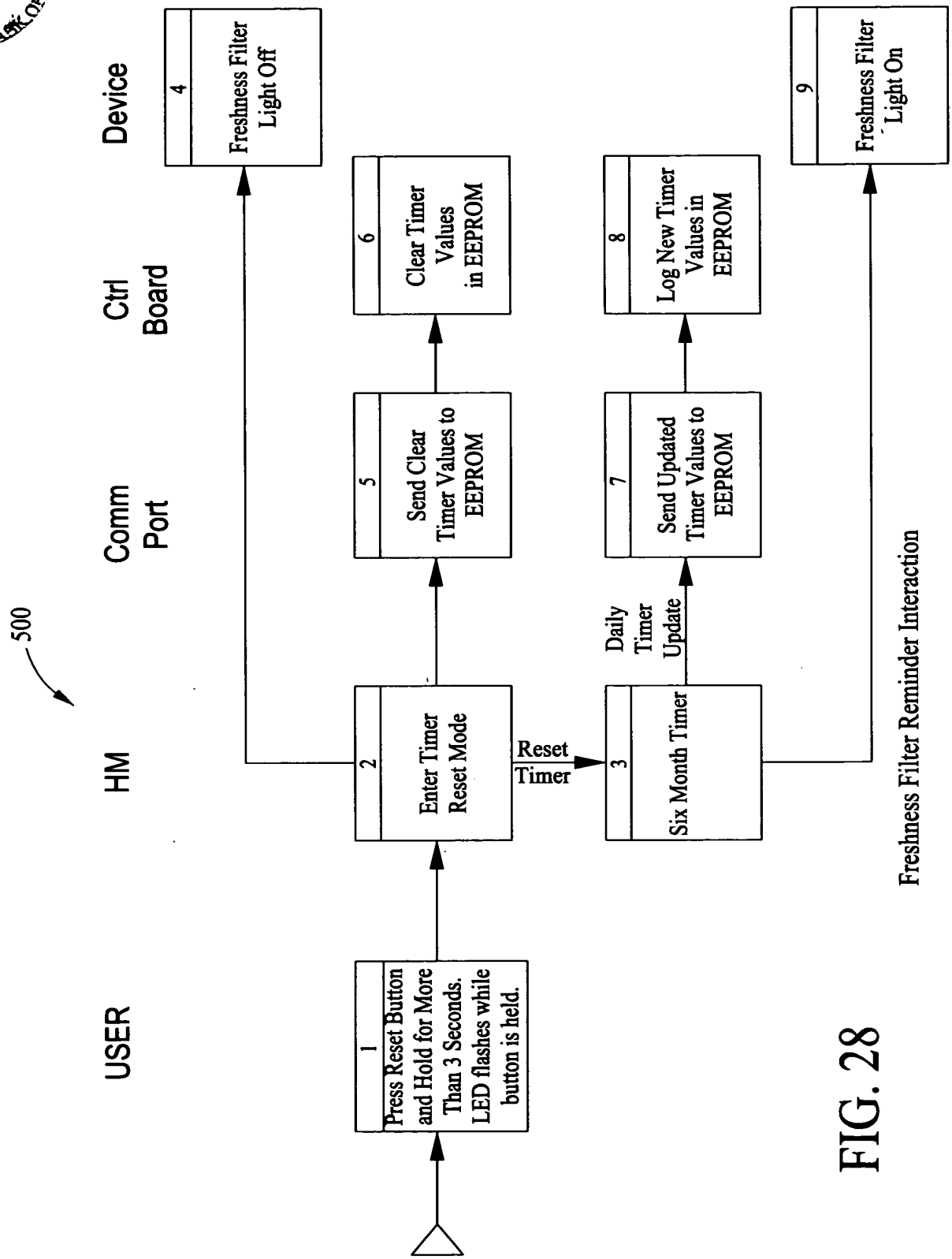


FIG. 28

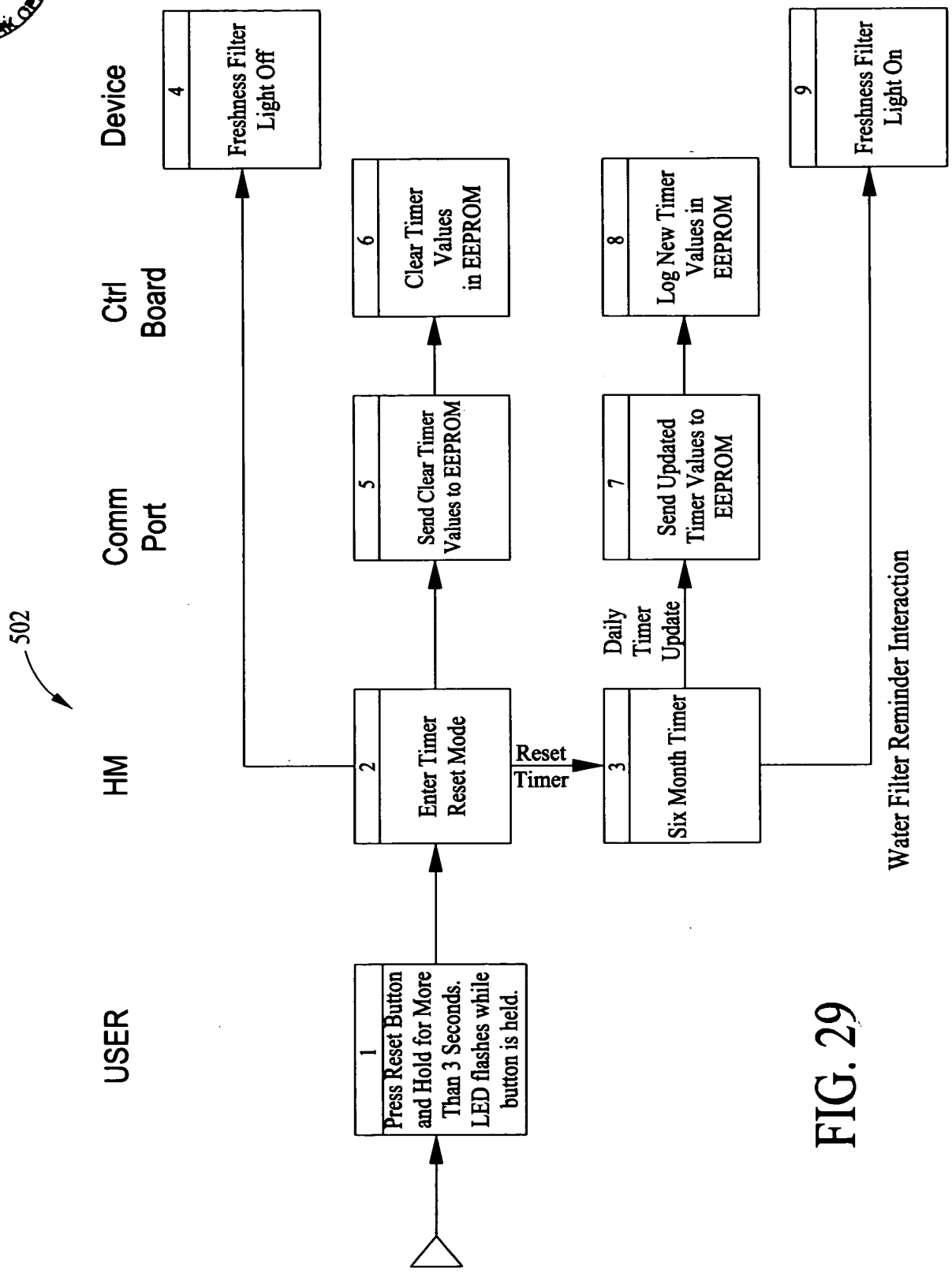
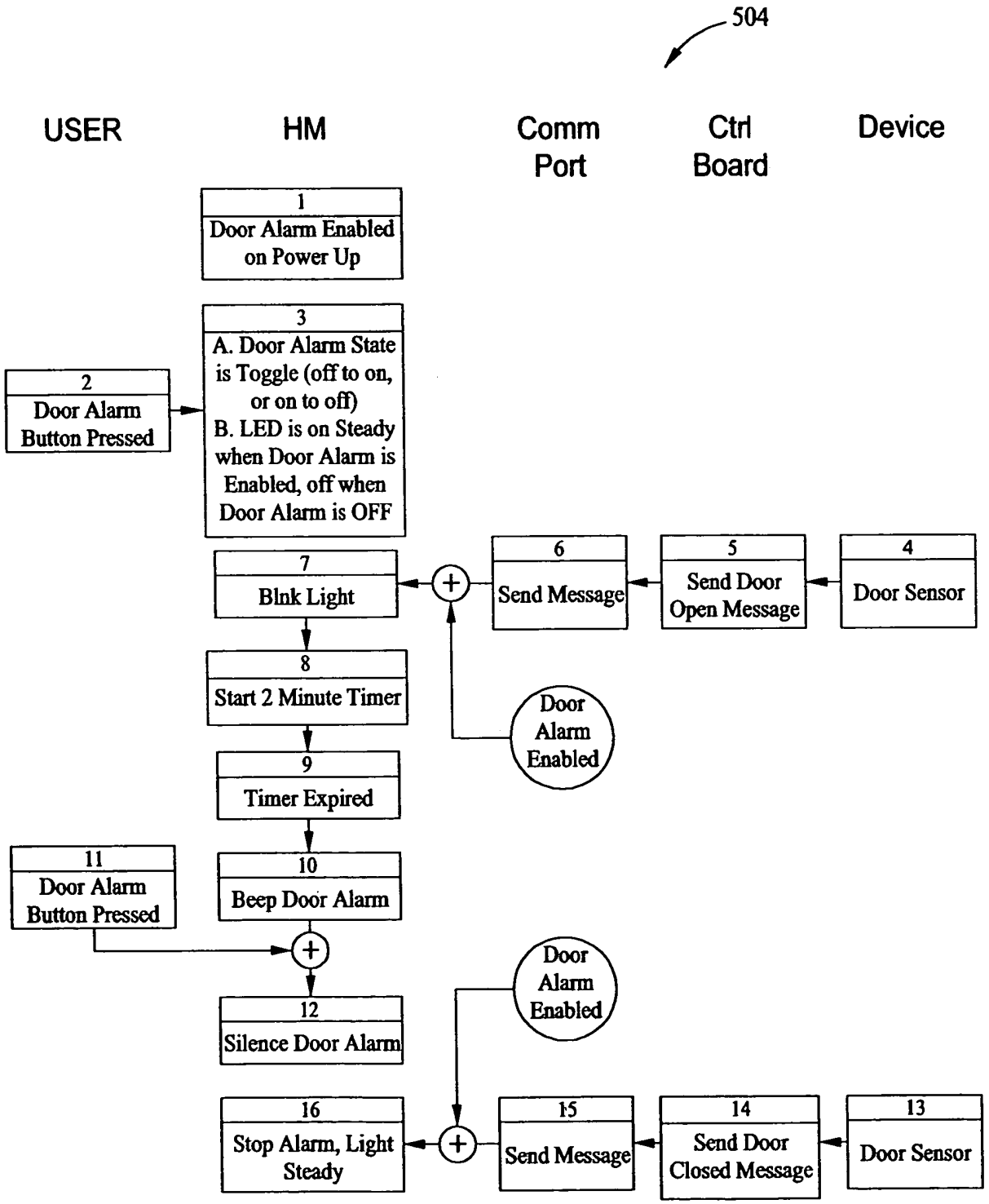


FIG. 29



Door Open Interaction Diagram

FIG. 30

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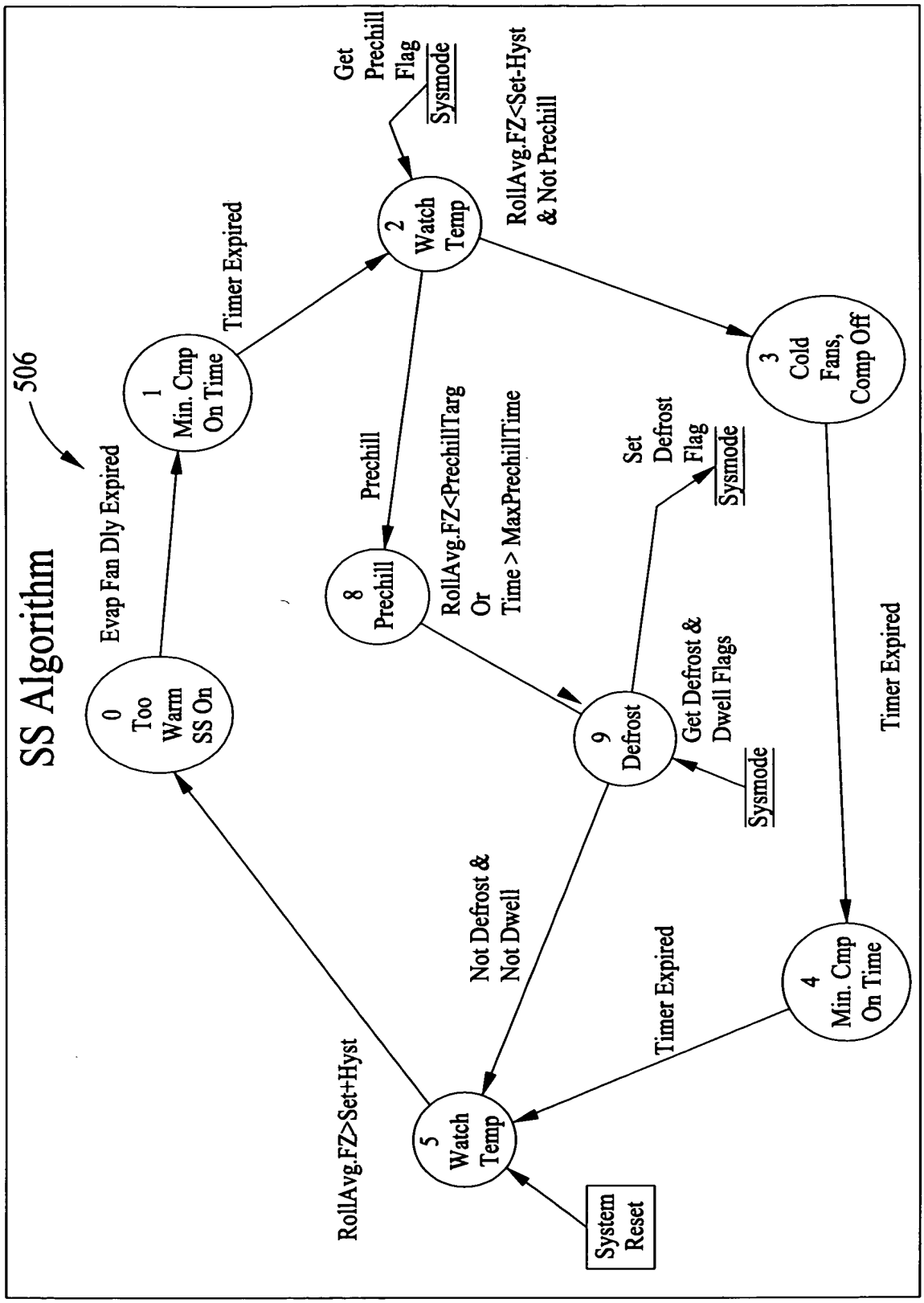
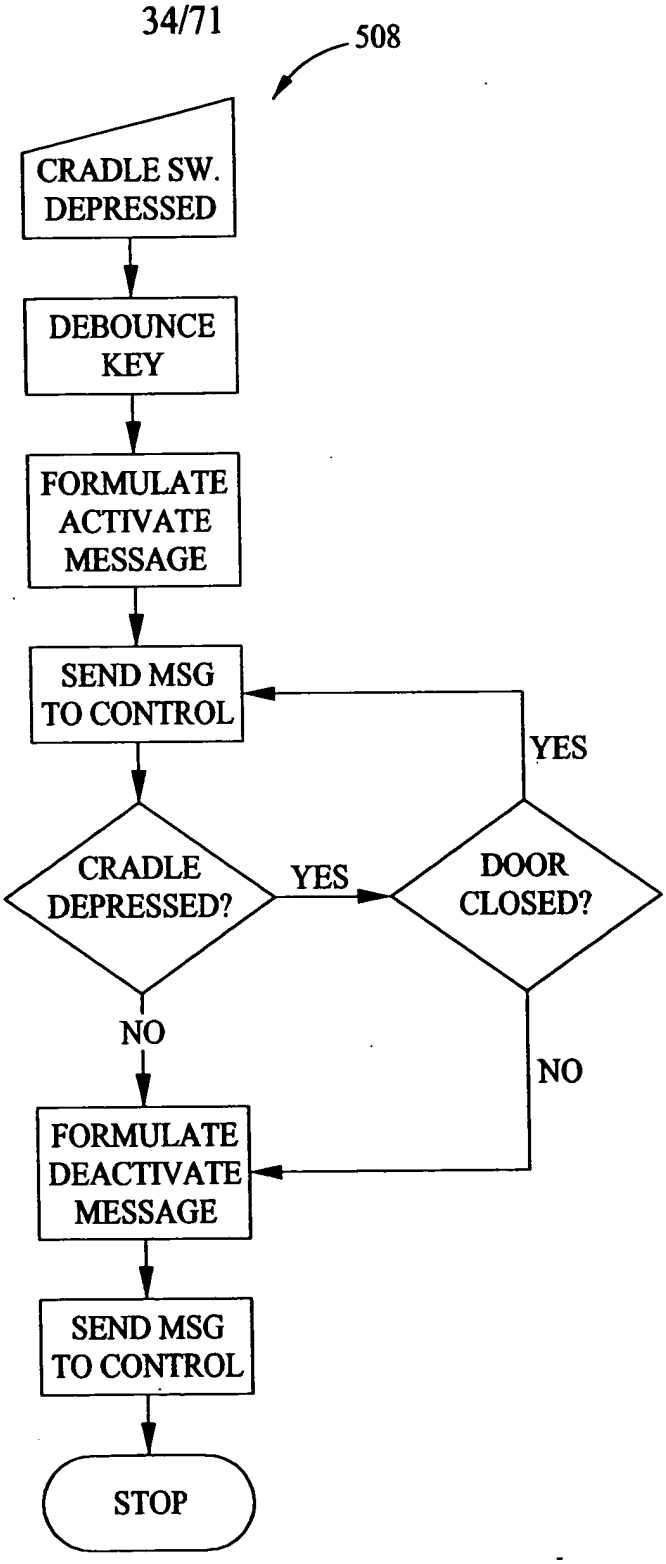


FIG. 31 Sealed System Operational Algorithm



Dispenser Control Algorithm

FIG. 32

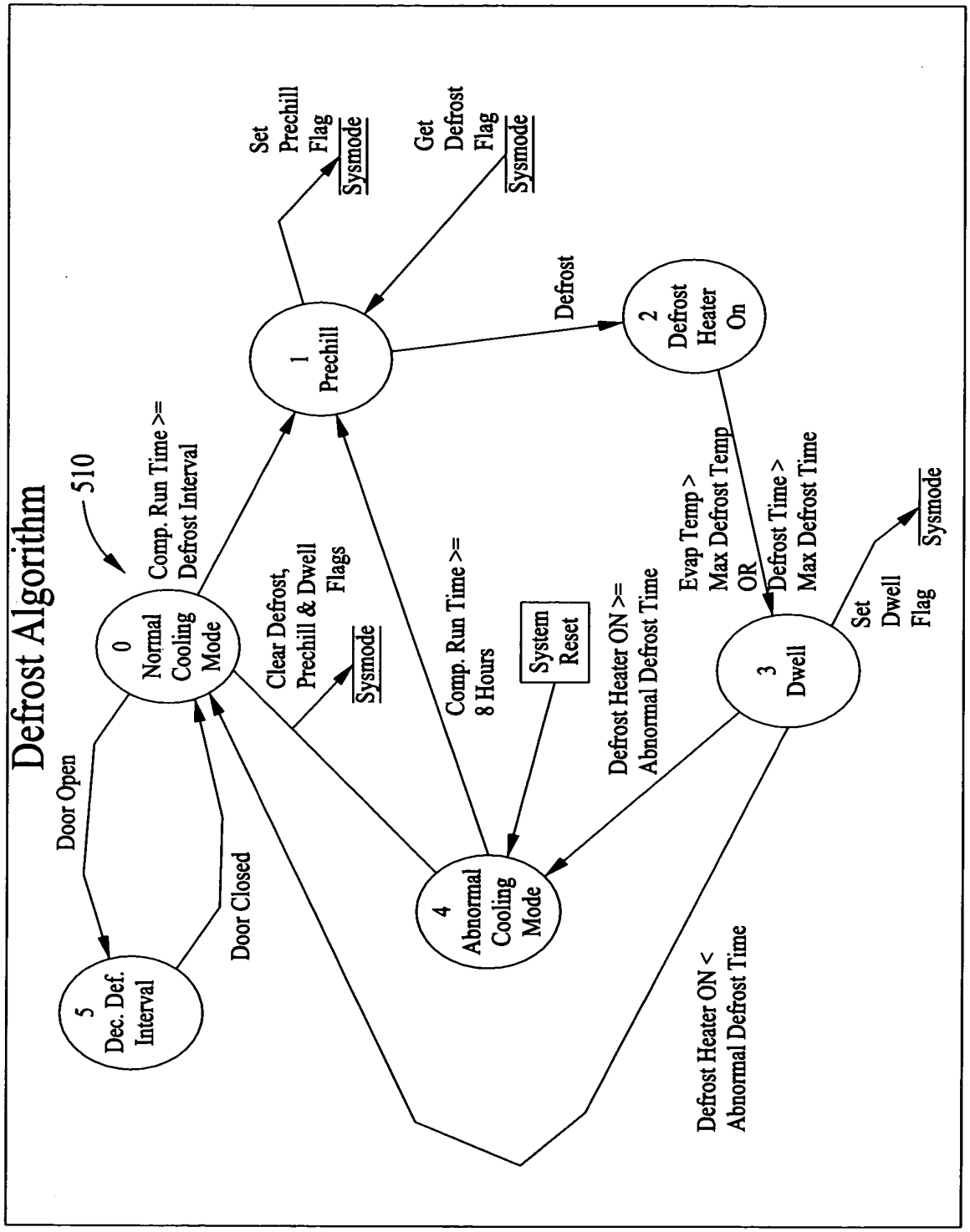


FIG. 33 Defrost Control State Diagram

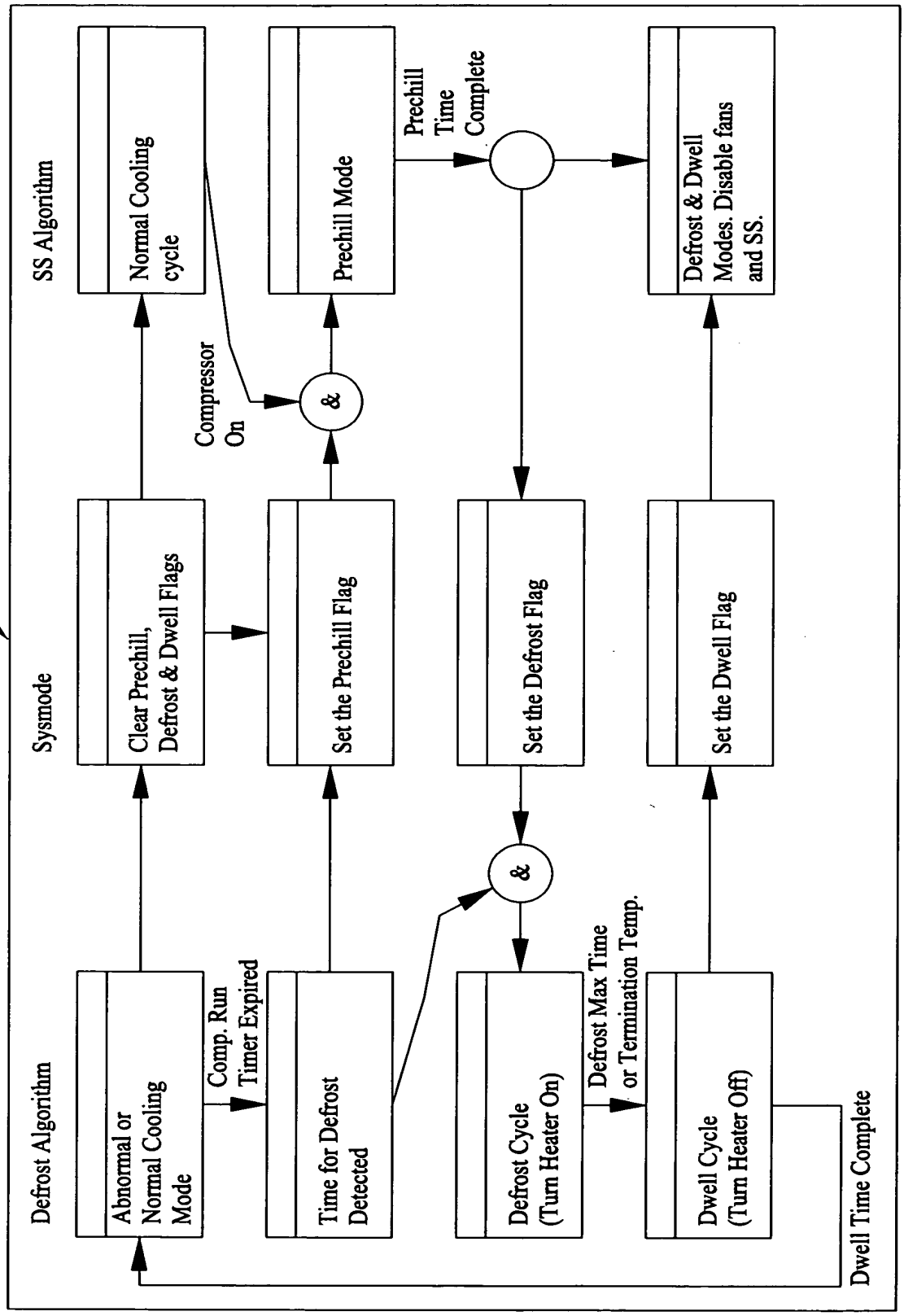
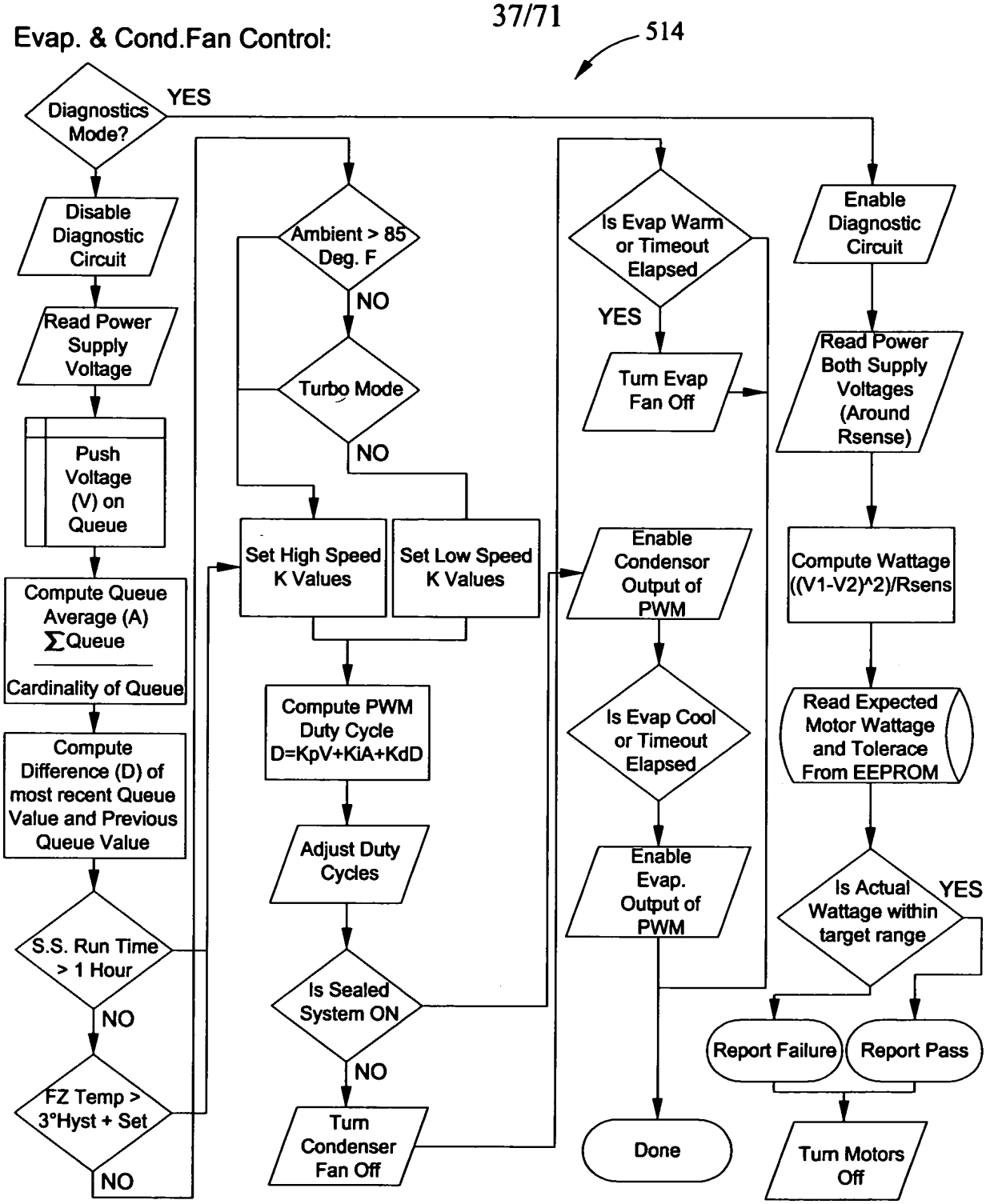


FIG. 34

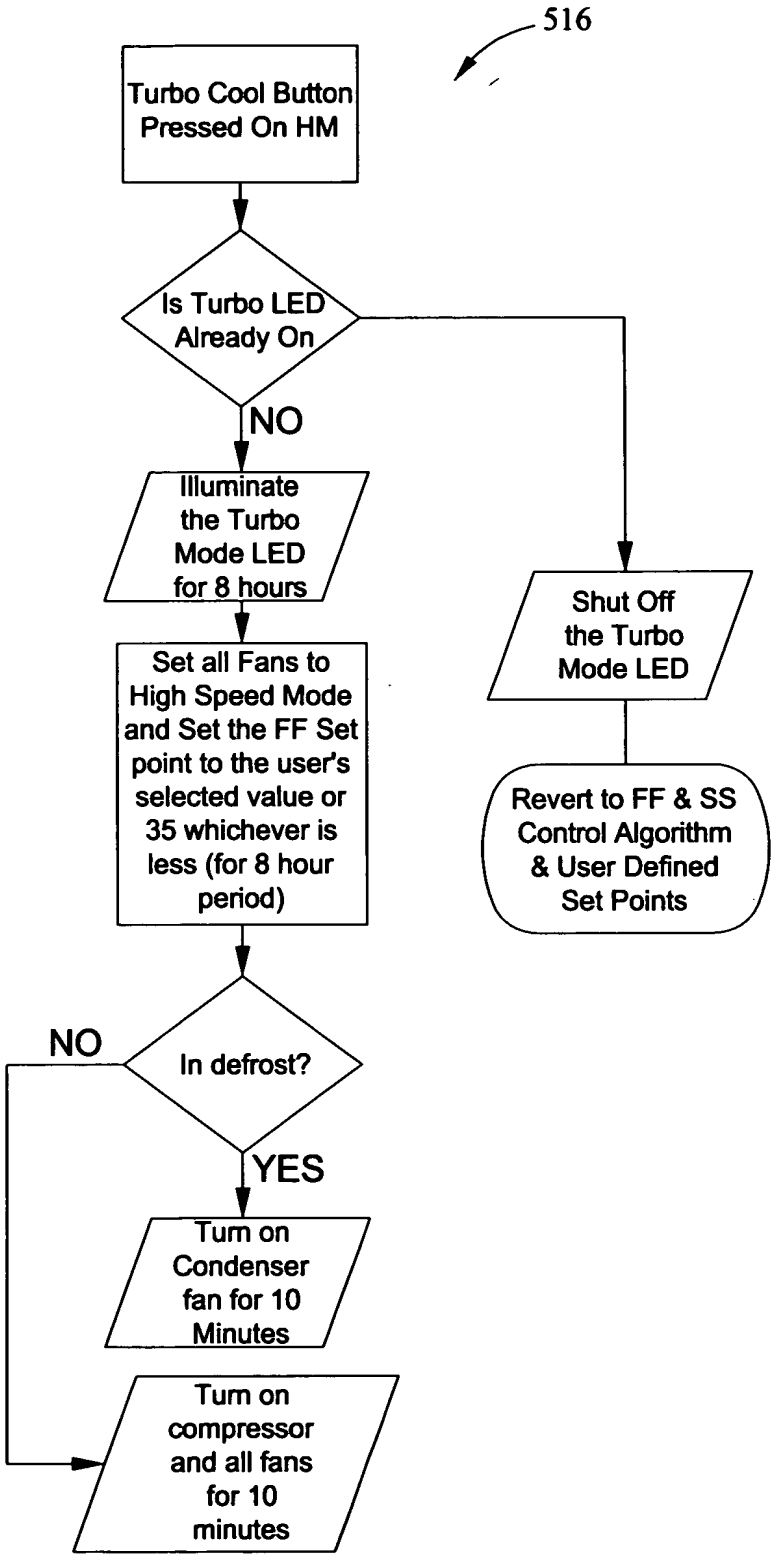
Evap. & Cond.Fan Control:



Fan Speed Control

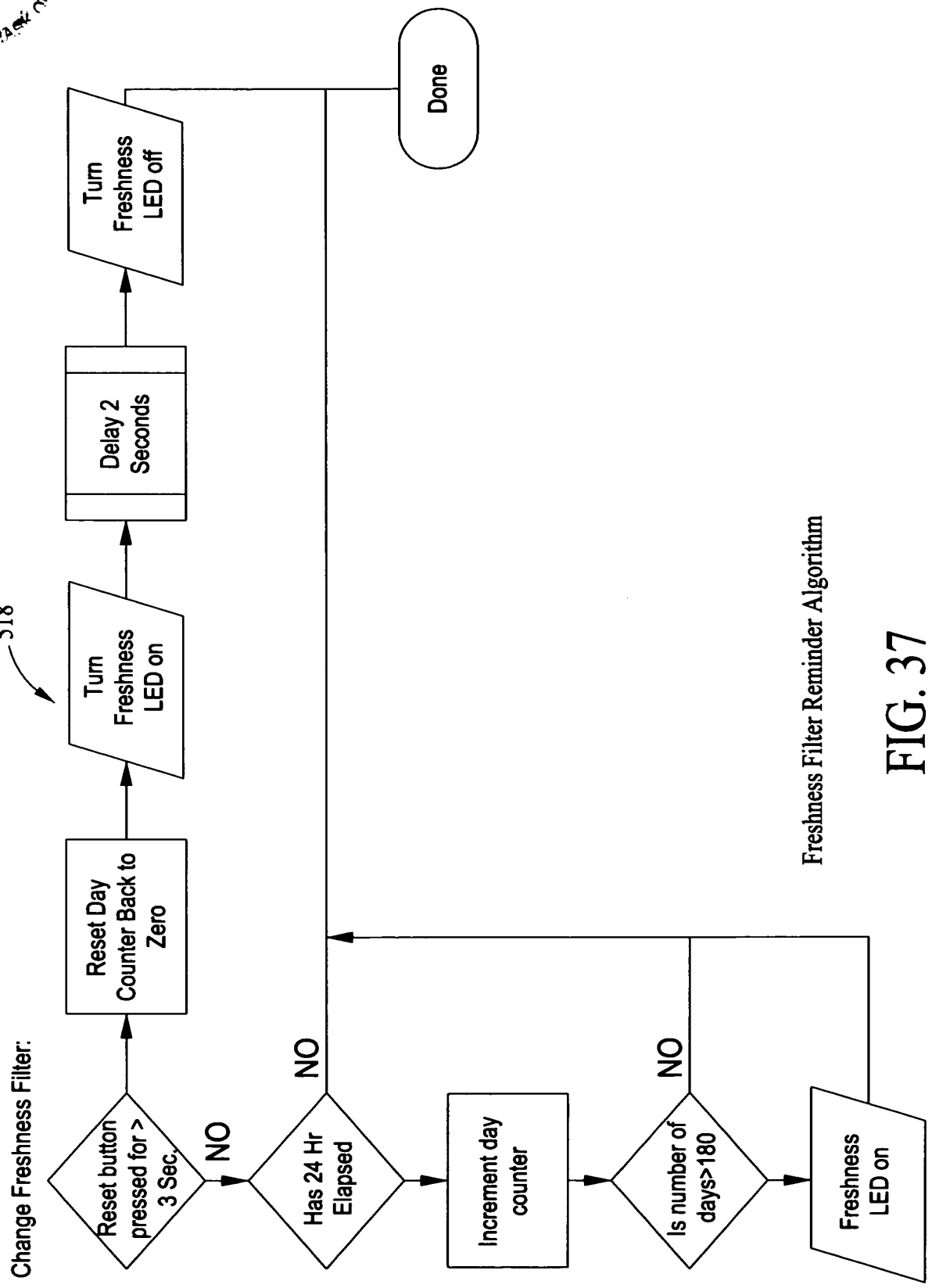
Notes: 1. The FF & Evaporator fans will shut off for the first five minutes that the door is open
2. Only one fan at a time can be on at a time during diagnostics.
3. Once the fan has been switched to high speed, it remains in that state until the operational cycle is complete.

FIG. 35



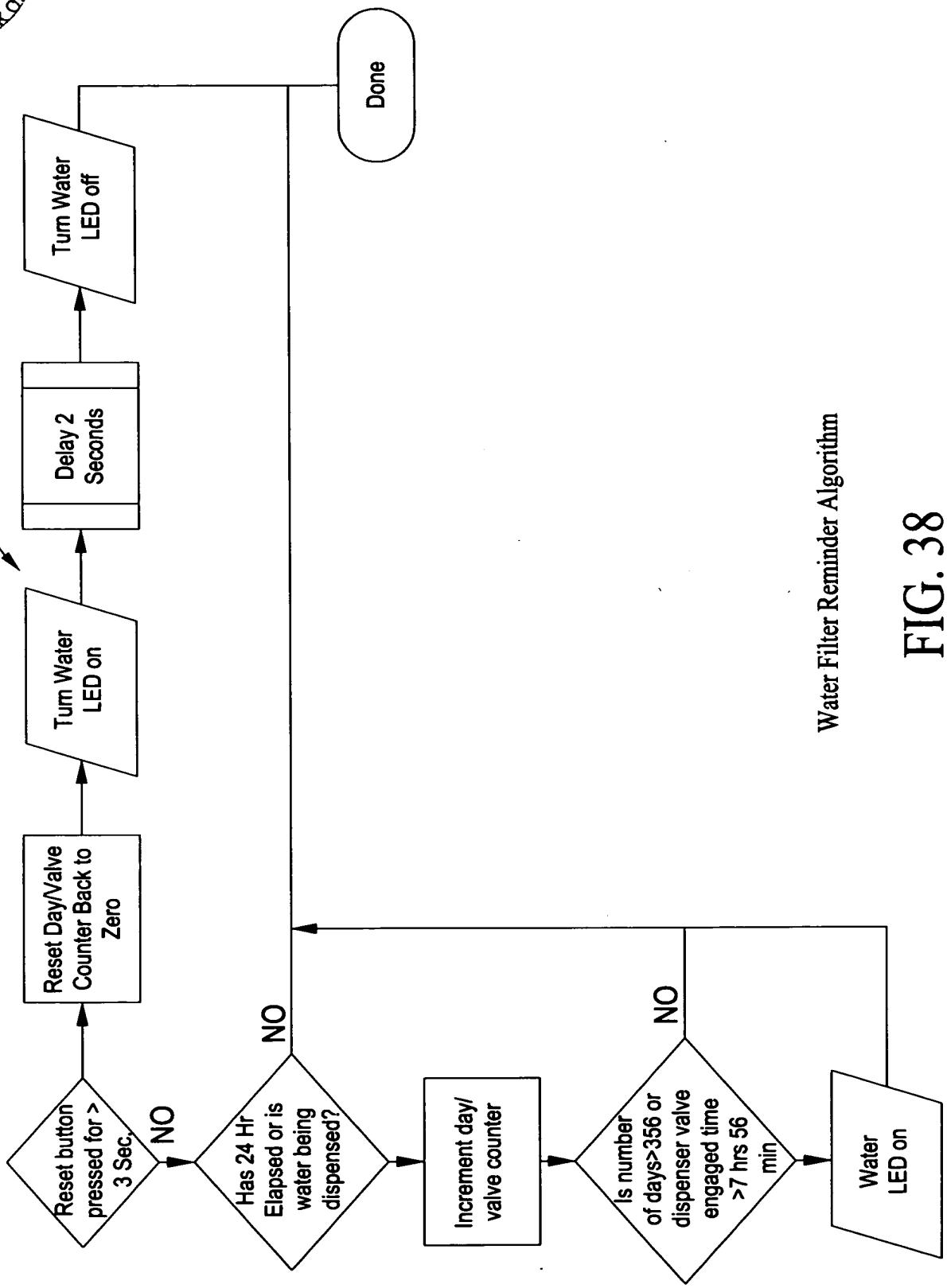
Turbo Cycle Algorithm

FIG. 36



Freshness Filter Reminder Algorithm

FIG. 37



Water Filter Reminder Algorithm

FIG. 38

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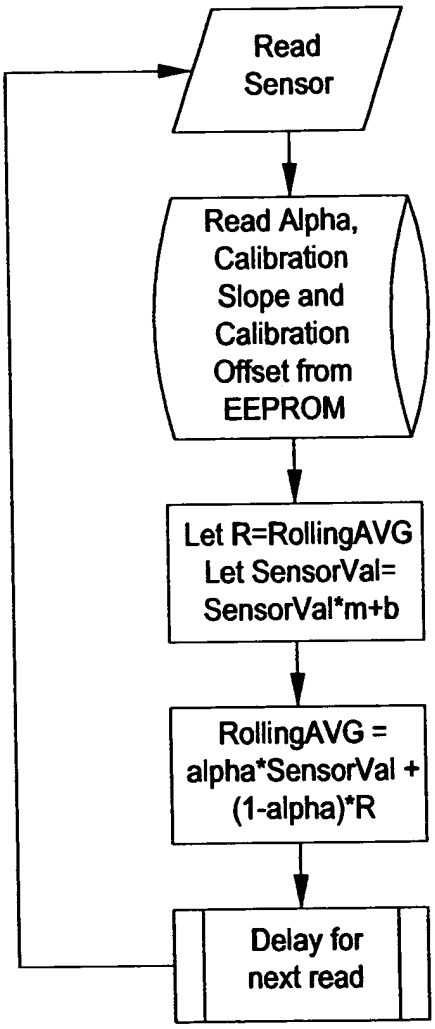
SENSOR READ AND ROLLING AVERAGE ALGO:



Sensor Reading Algorithm

NOTE:

Fresh food average uses this algorithm twice to create a 2nd pole filter.

FIG. 39

524

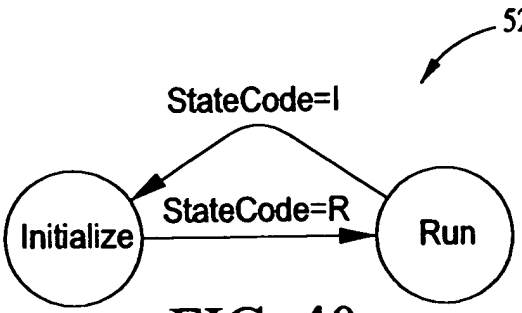


FIG. 40

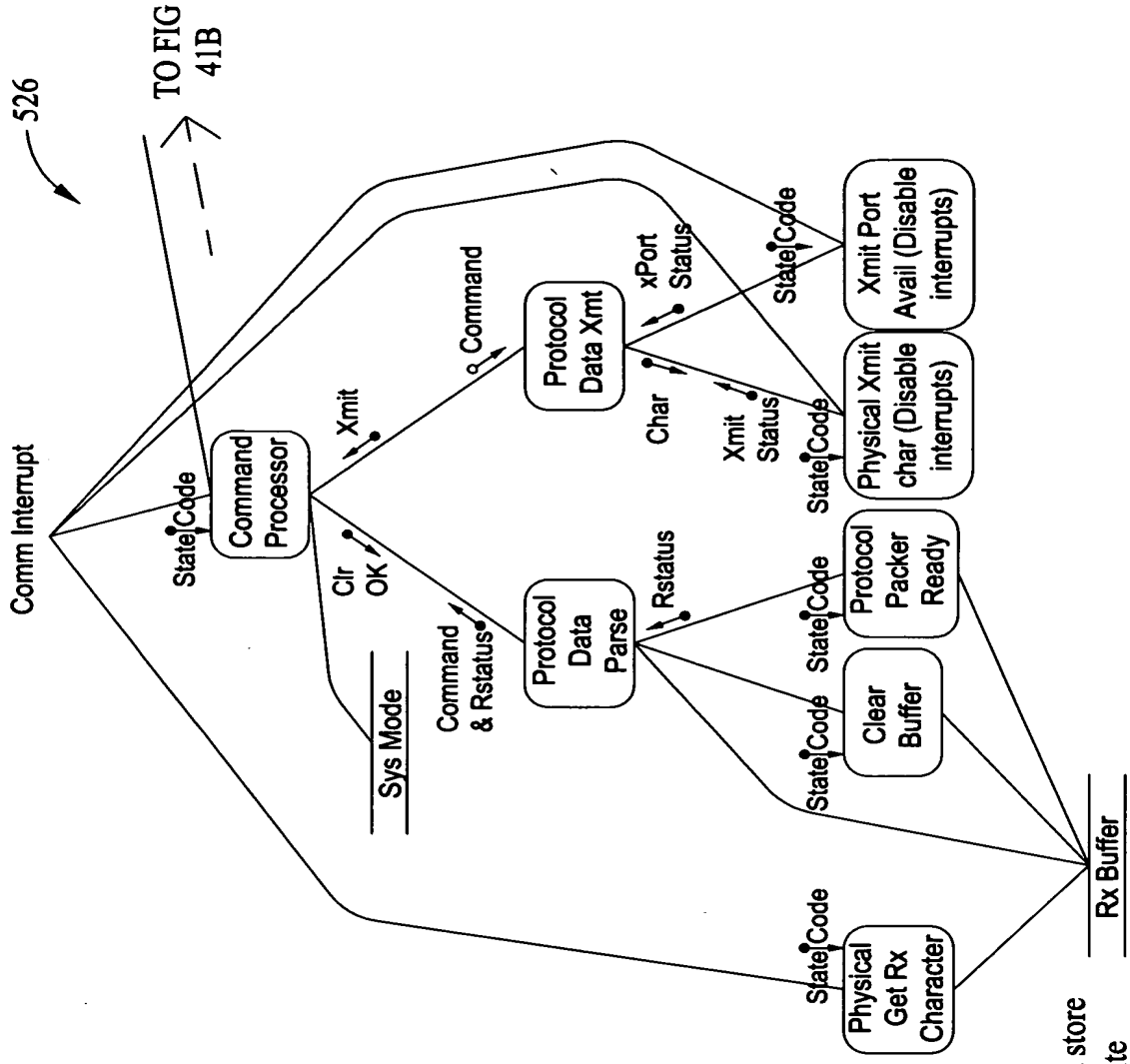


FIG. 41A

Note: Any Routine is allowed to read a data store
The command processor can read or write any data store.
Dashed line indicates a path for initialization only

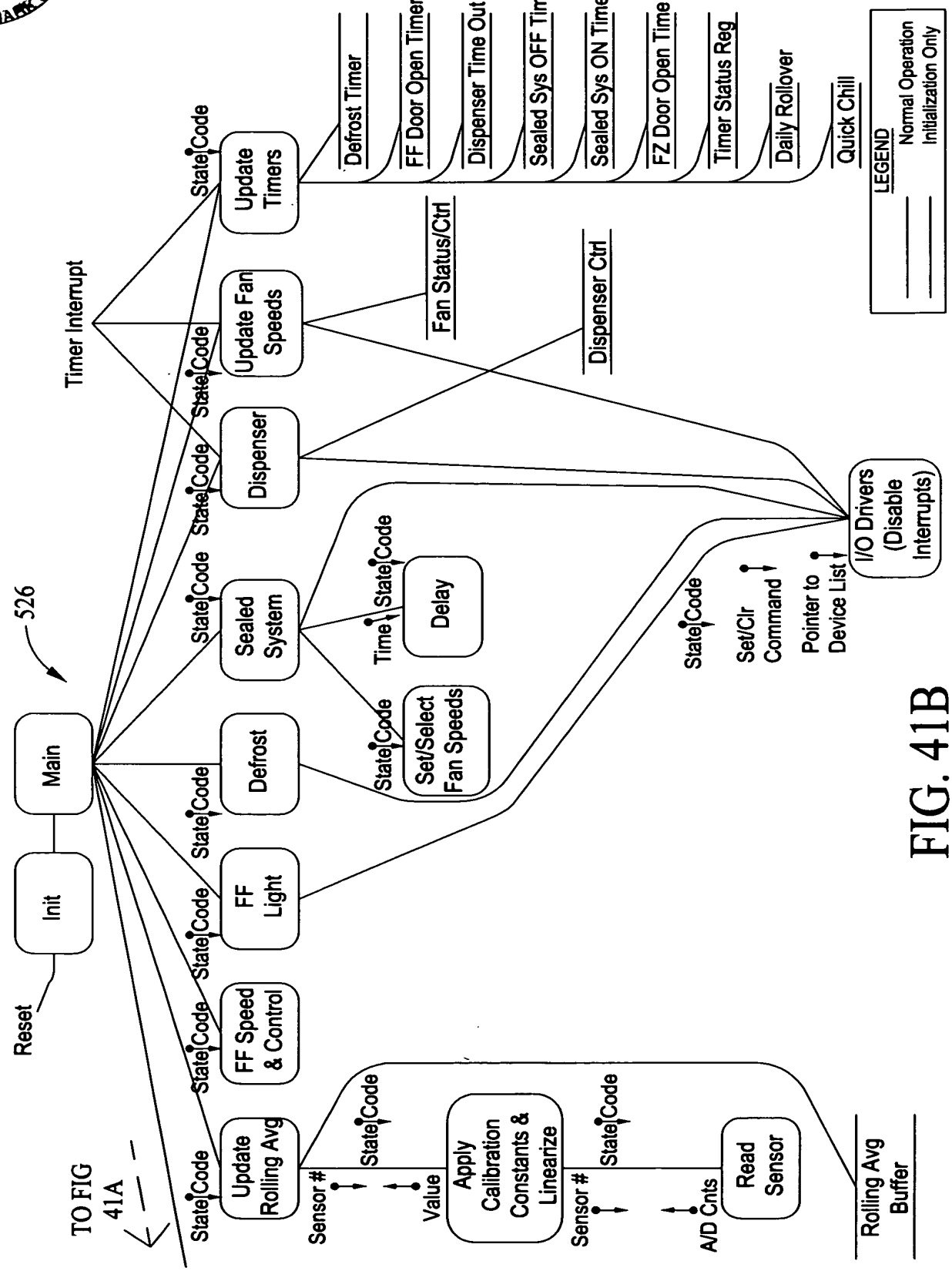
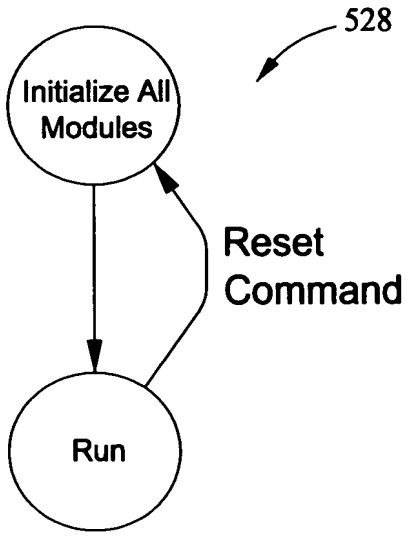


FIG. 41B



State Diagram For Main Control

FIG. 42

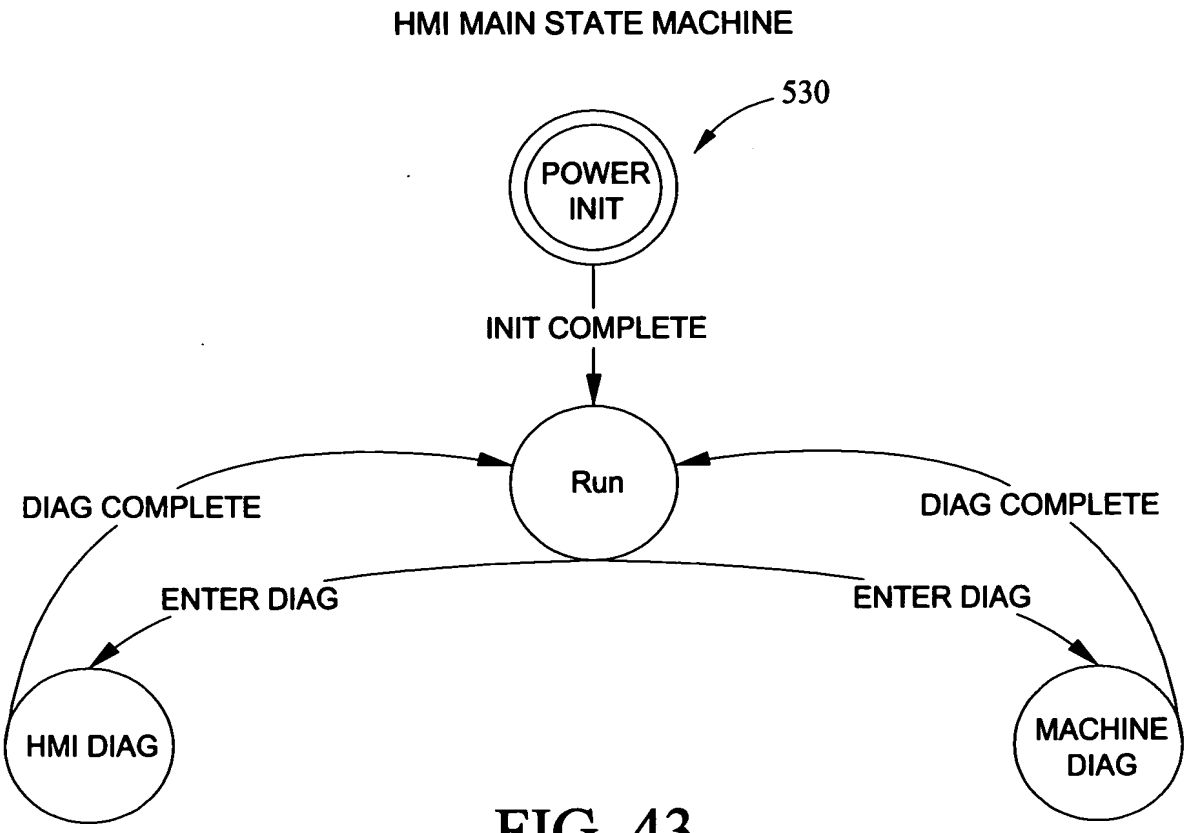


FIG. 43

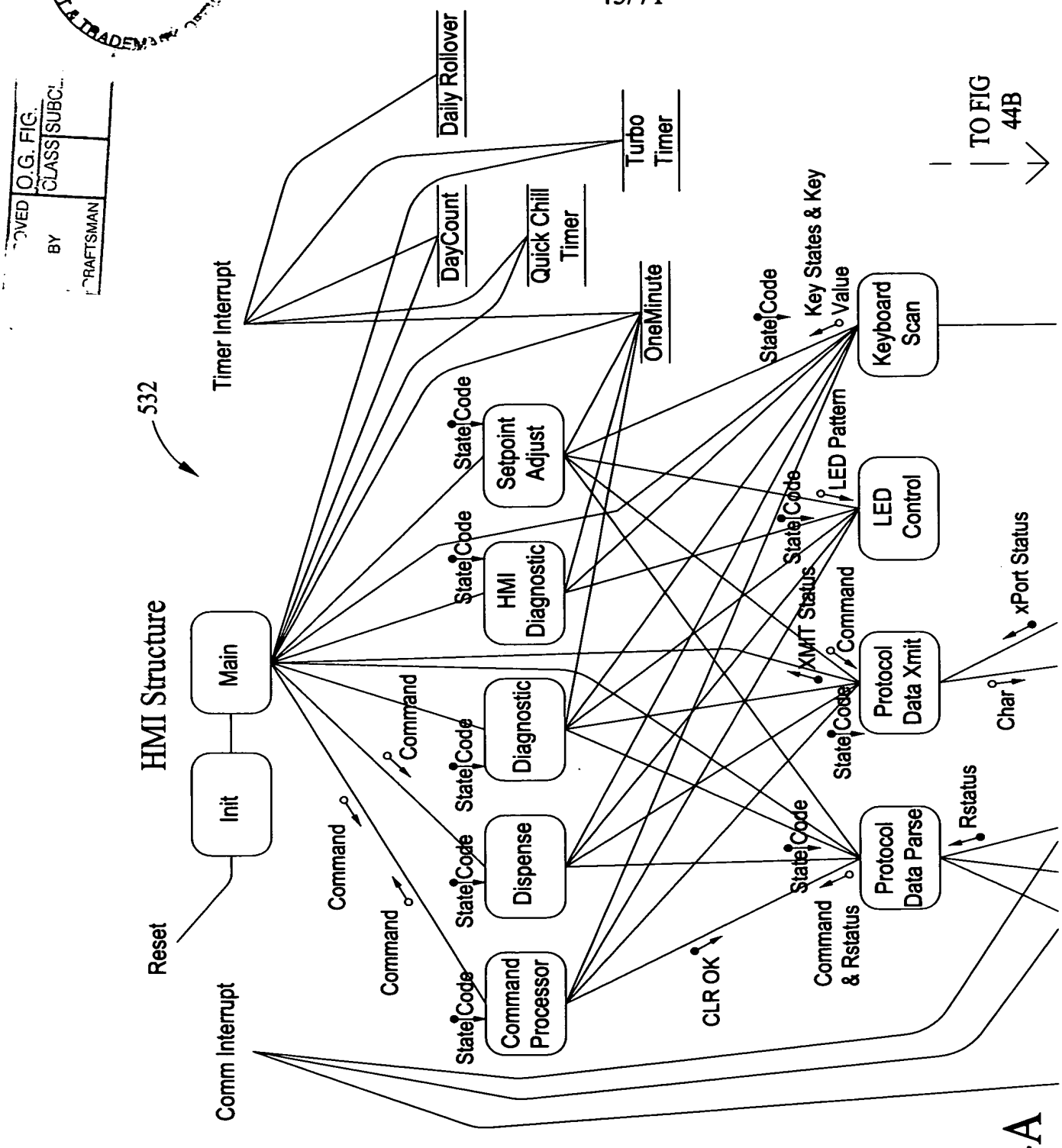


FIG. 44A

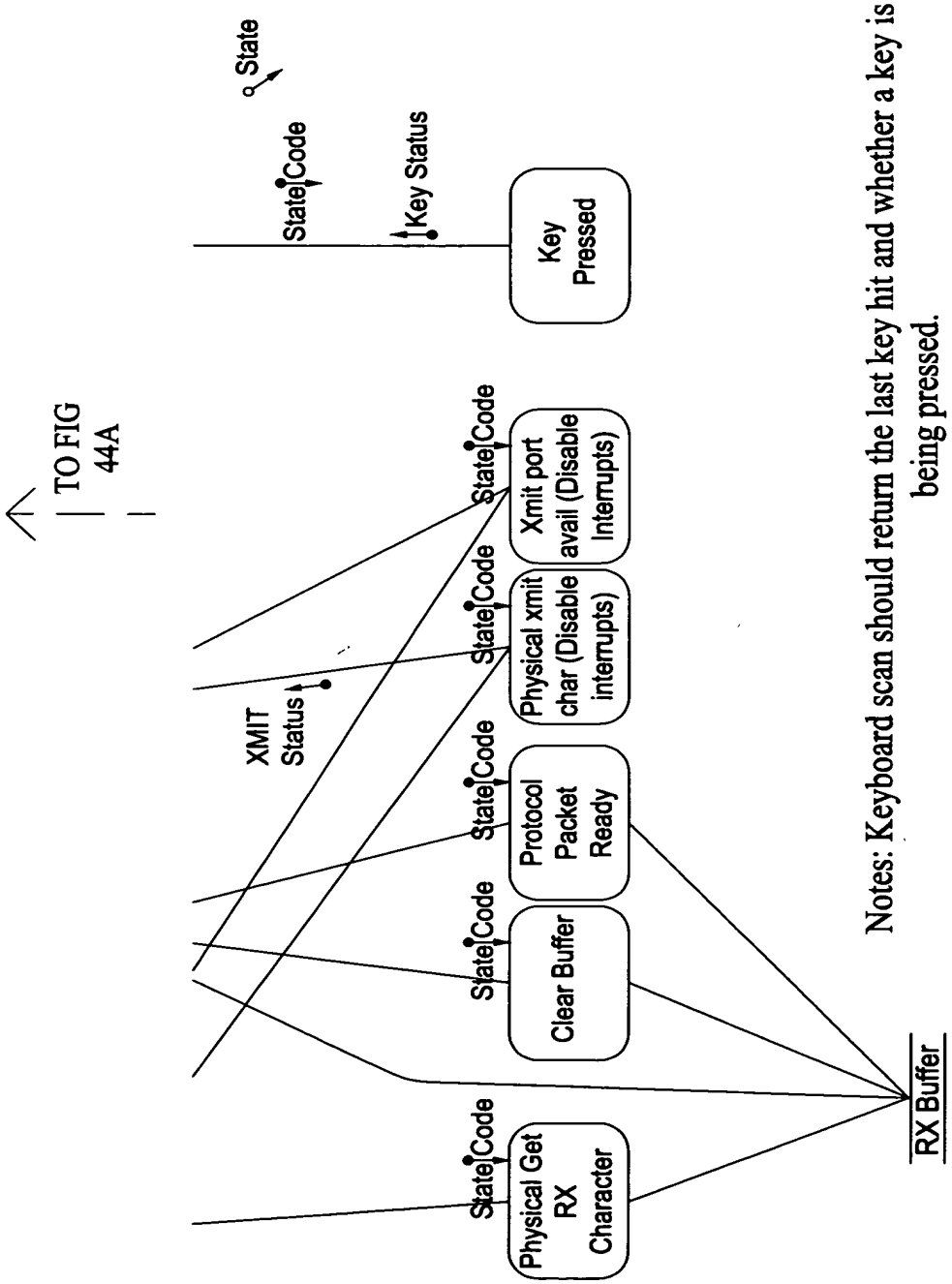


FIG. 44B

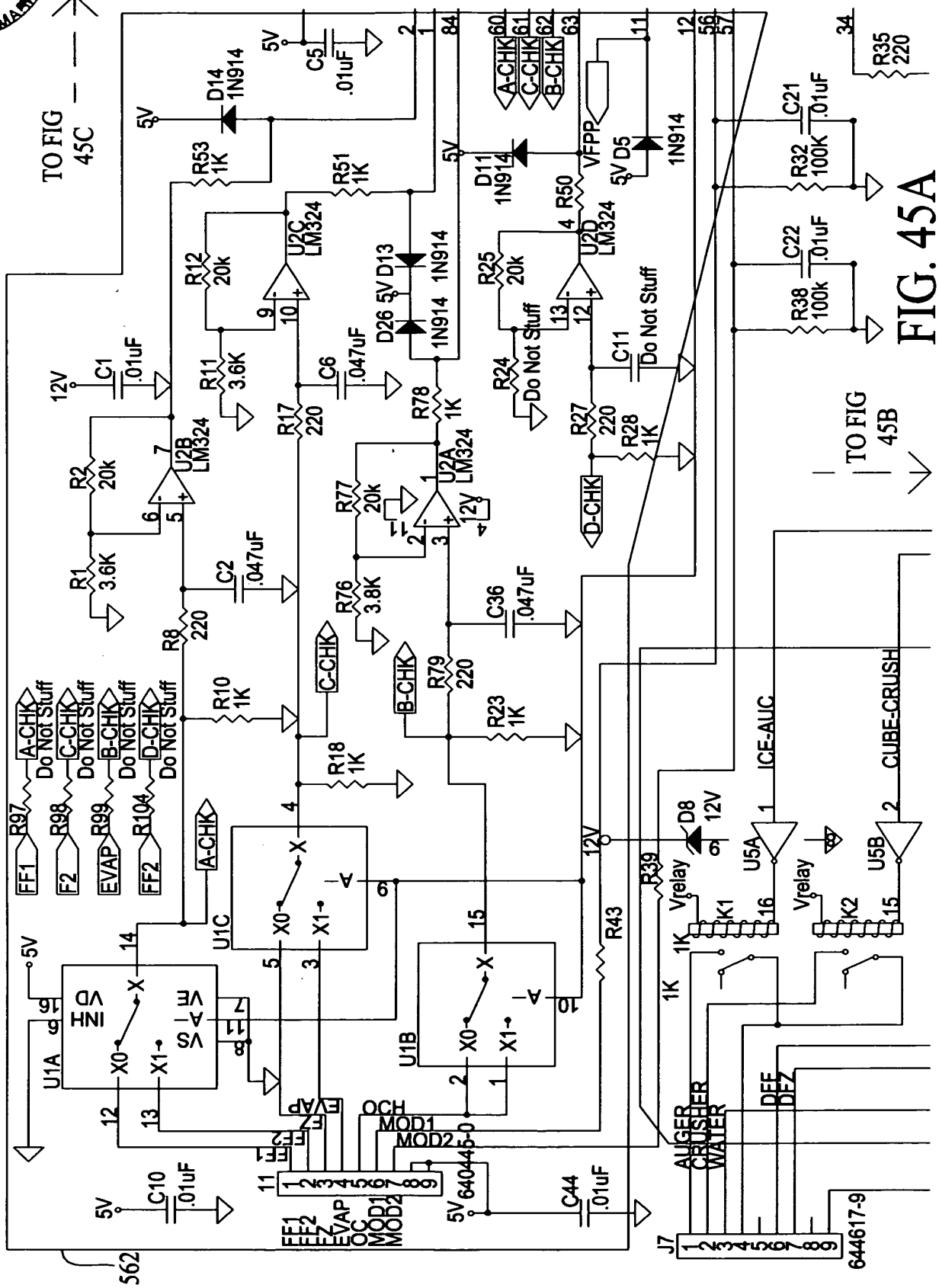


FIG. 45A

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St. Louis, MO 63102 (314) 621-5070

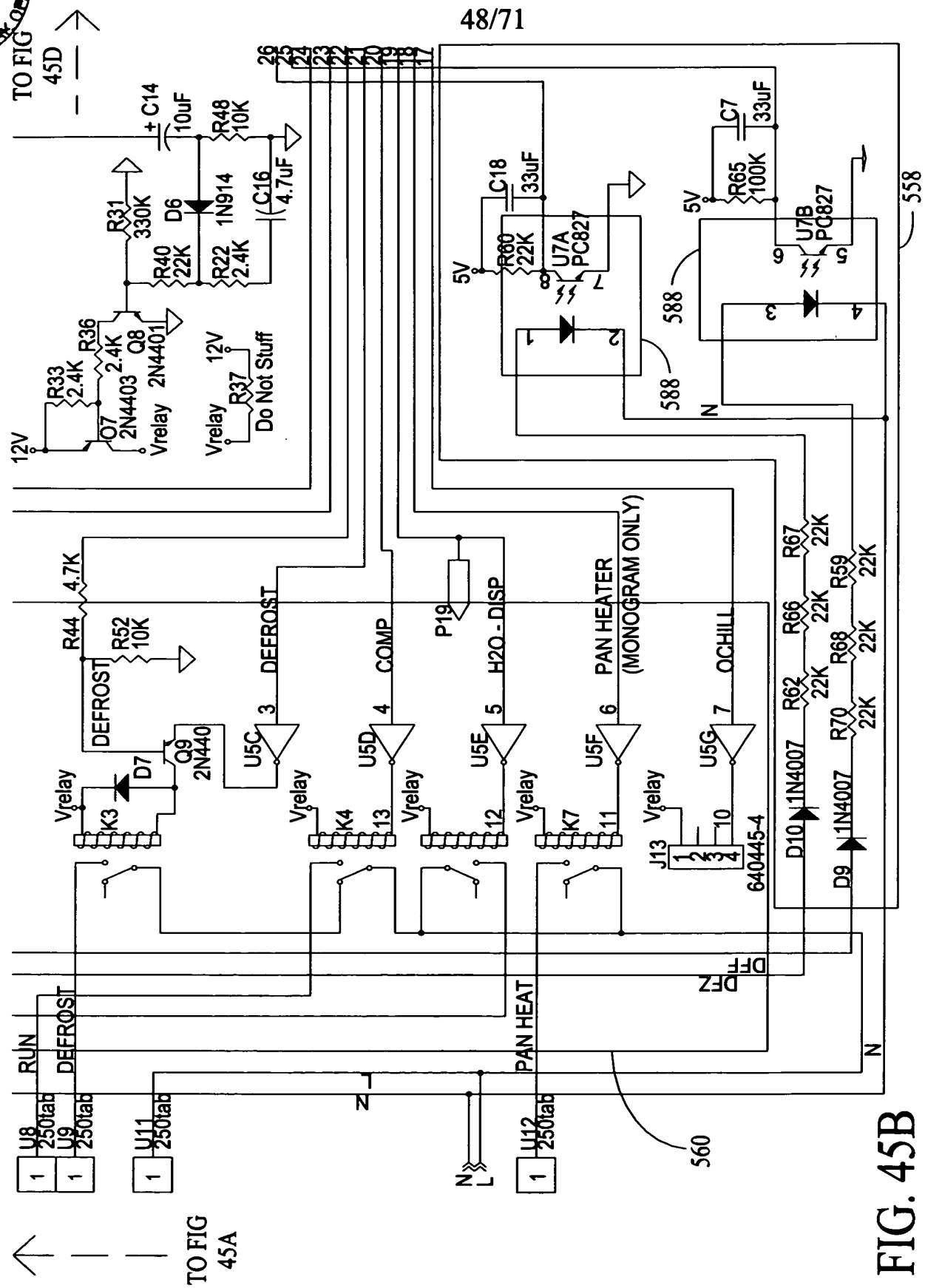
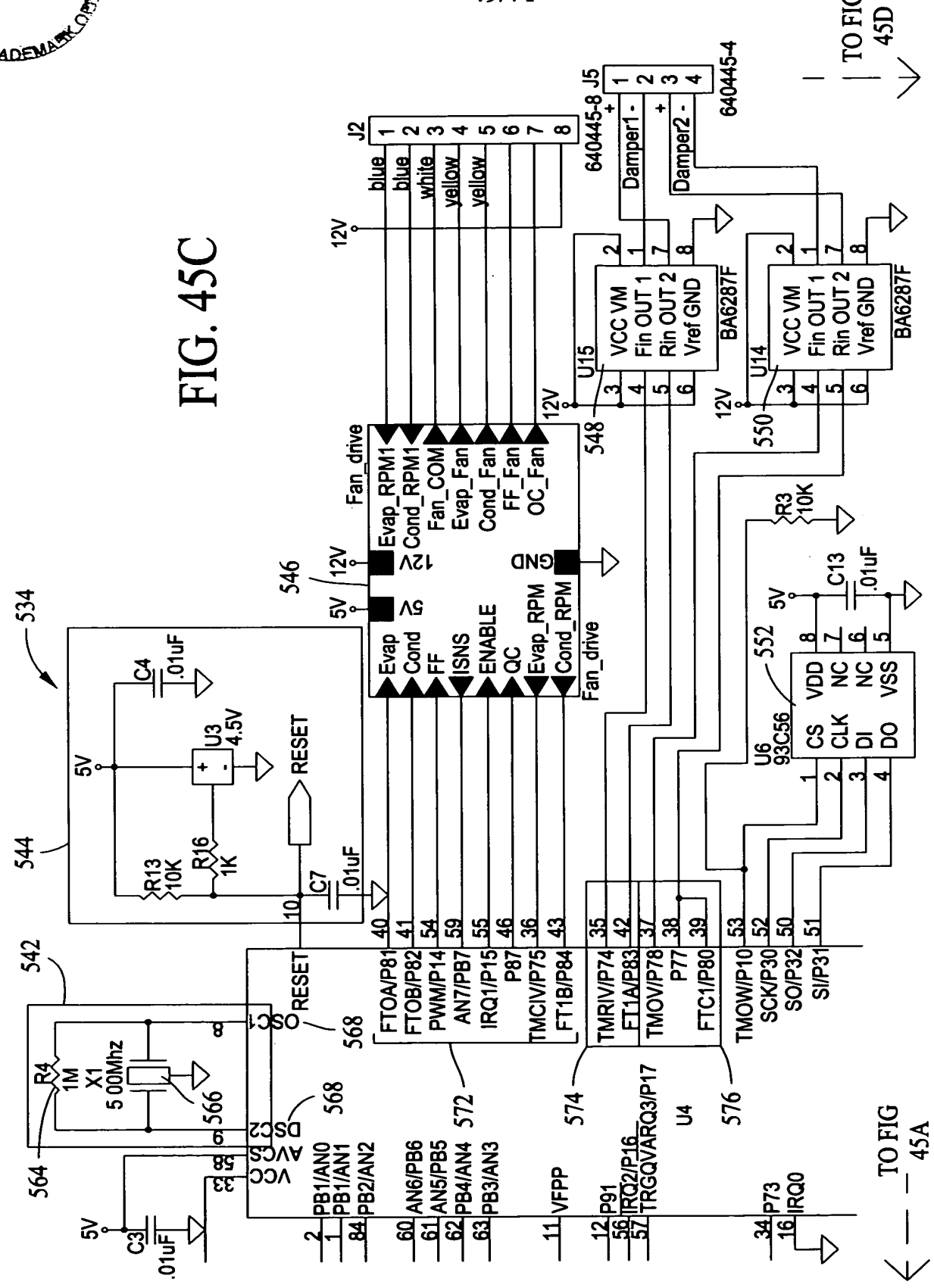


FIG. 45B

FIG. 45C



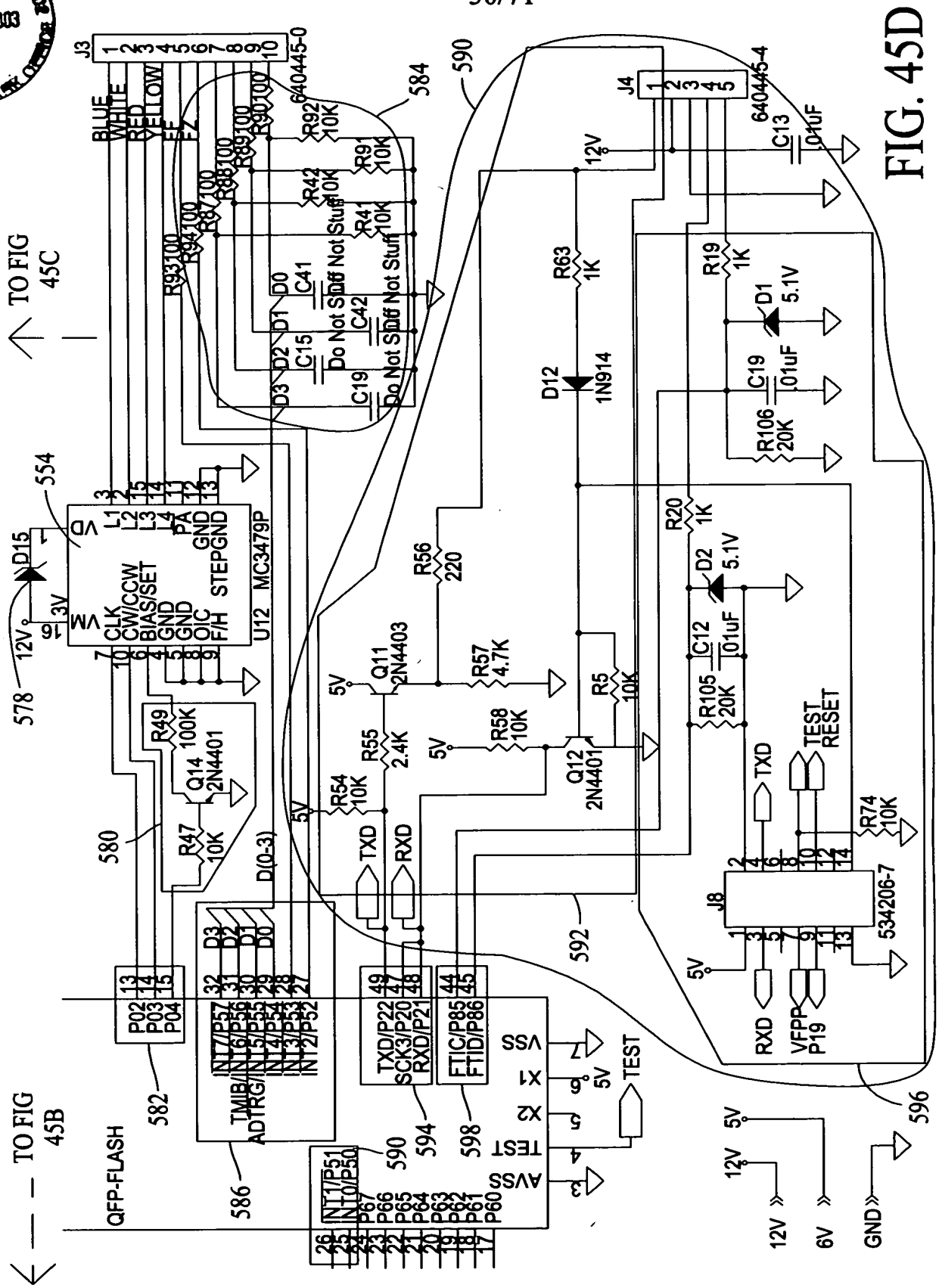


FIG. 45D

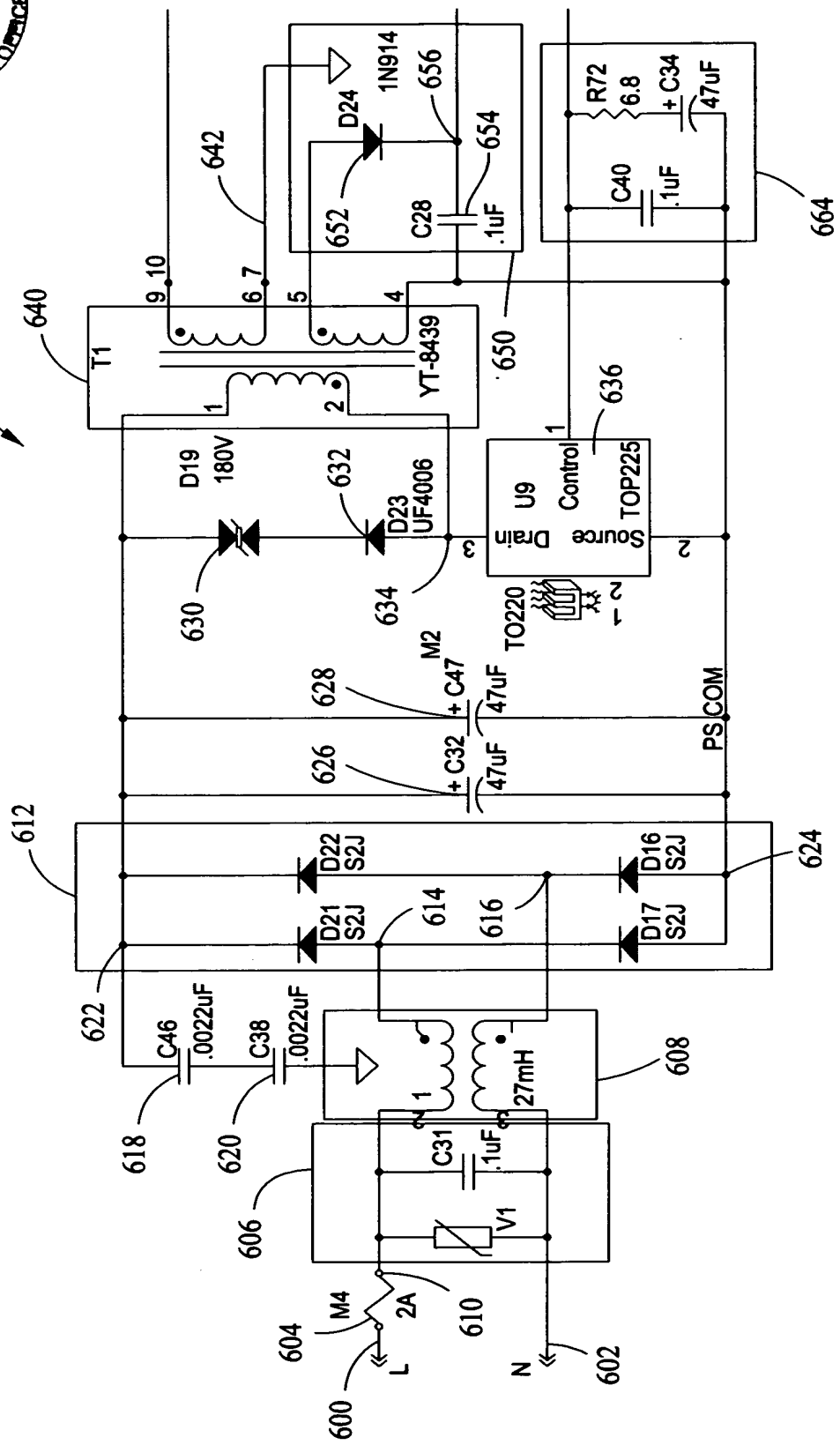


FIG. 45E

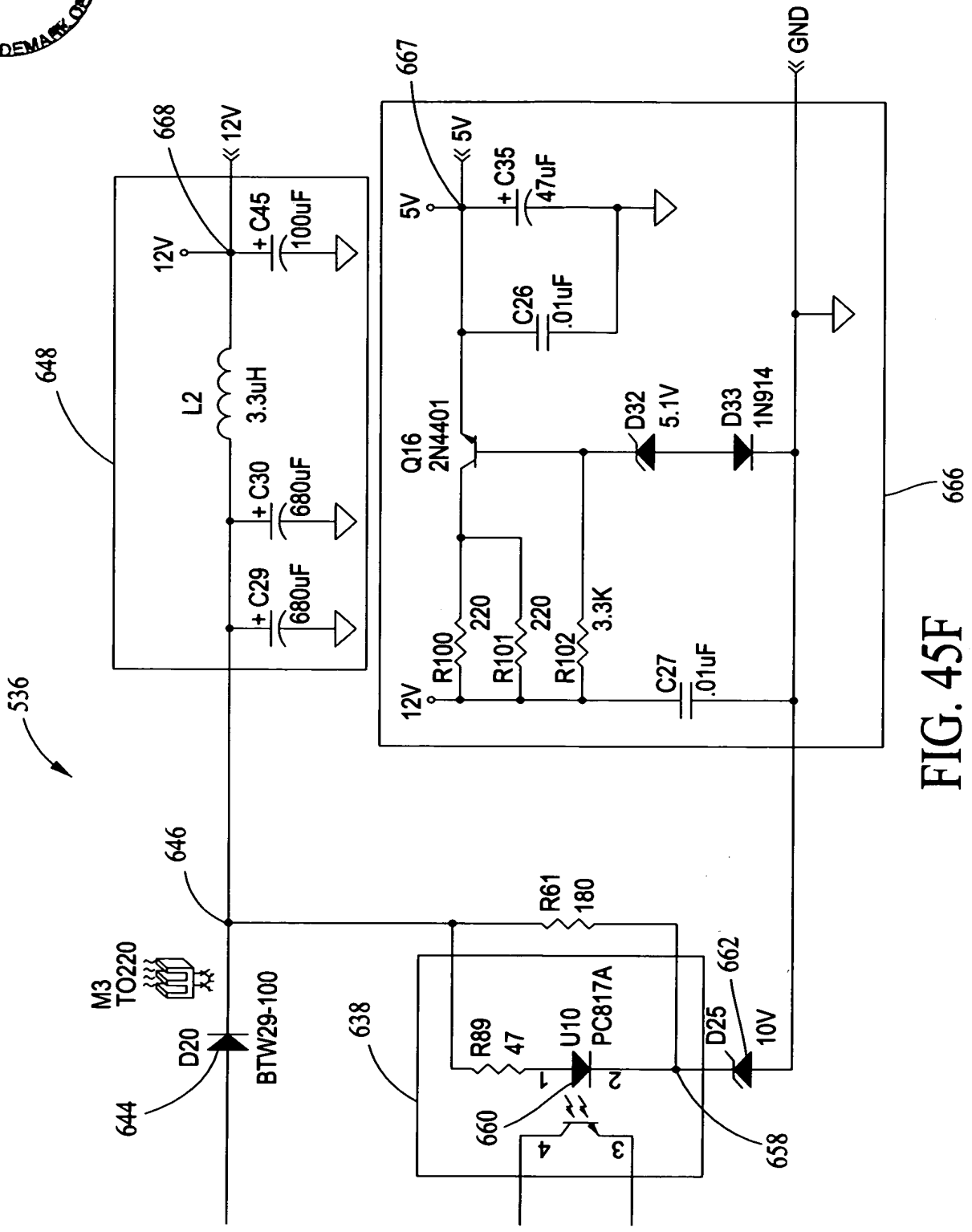
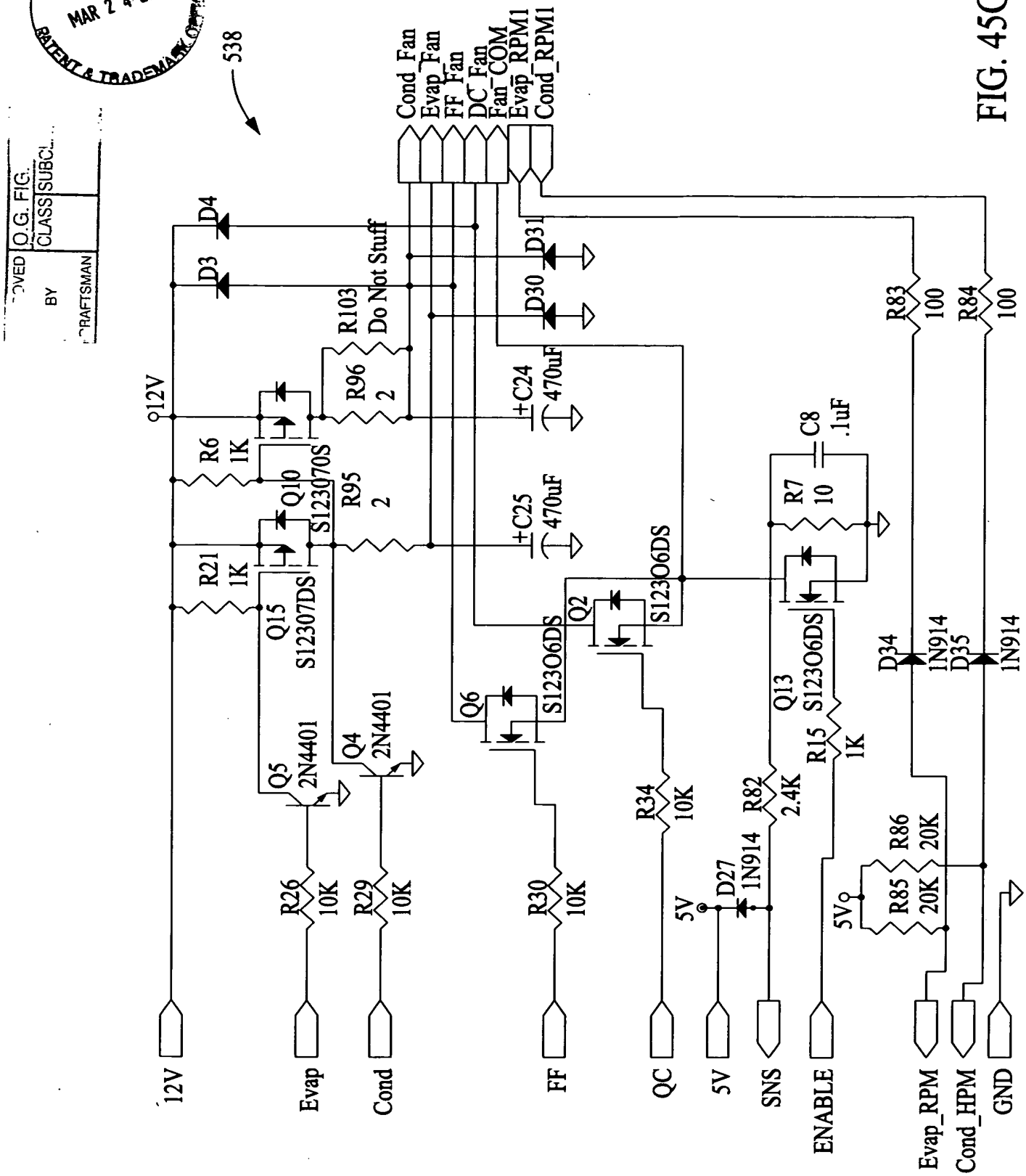


FIG. 45F

FIG. 45G



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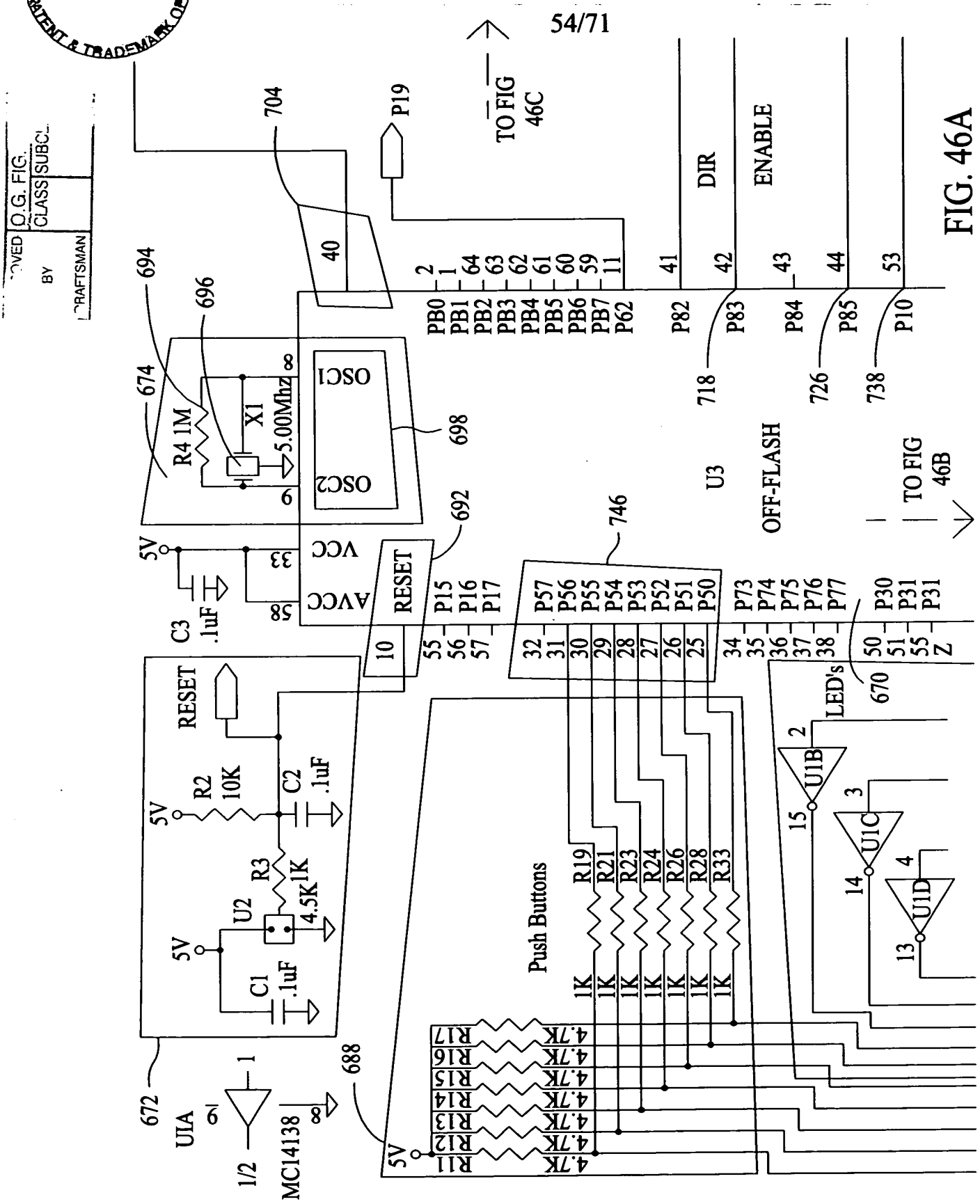

FIG. 46A

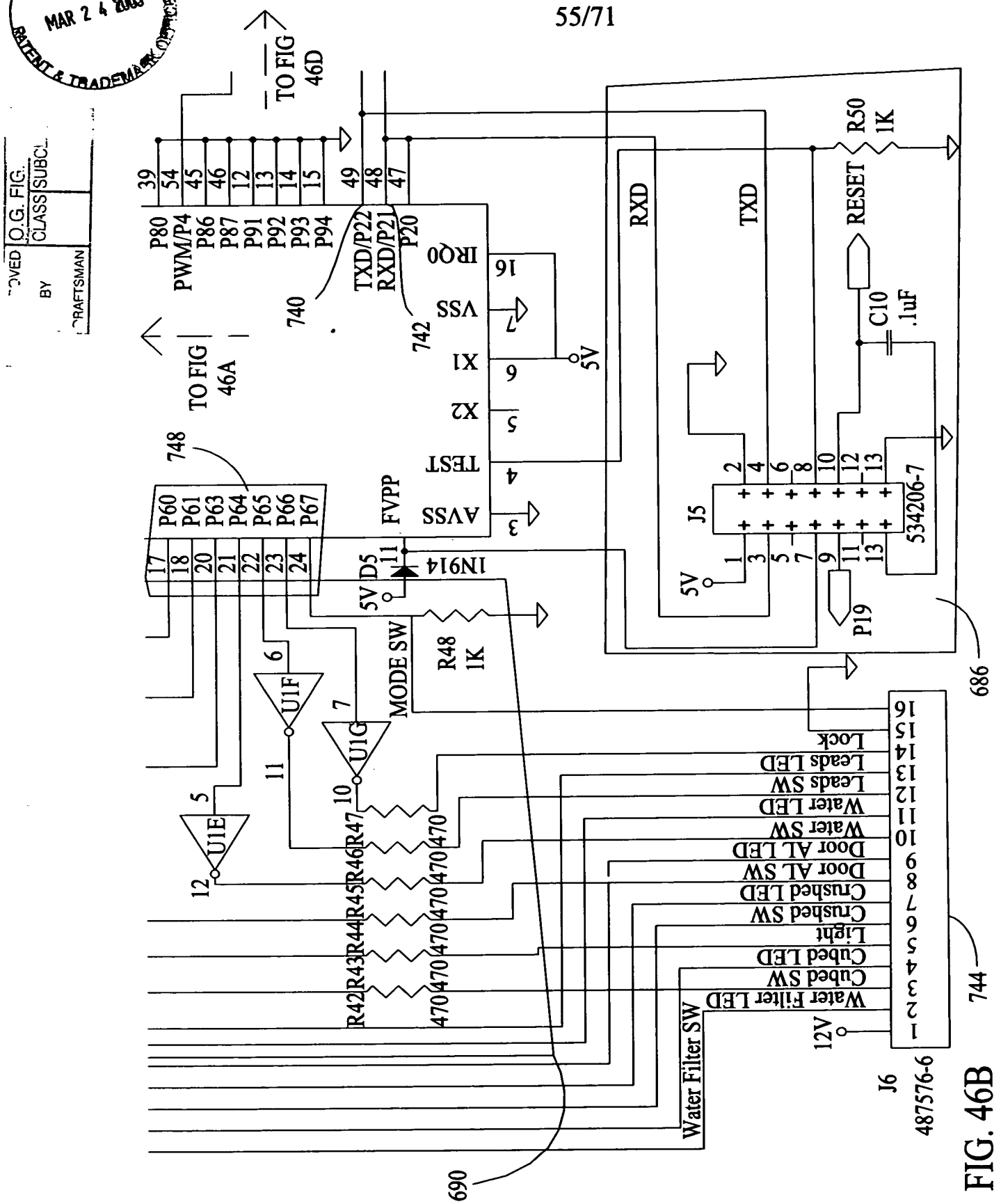

FIG. 46B

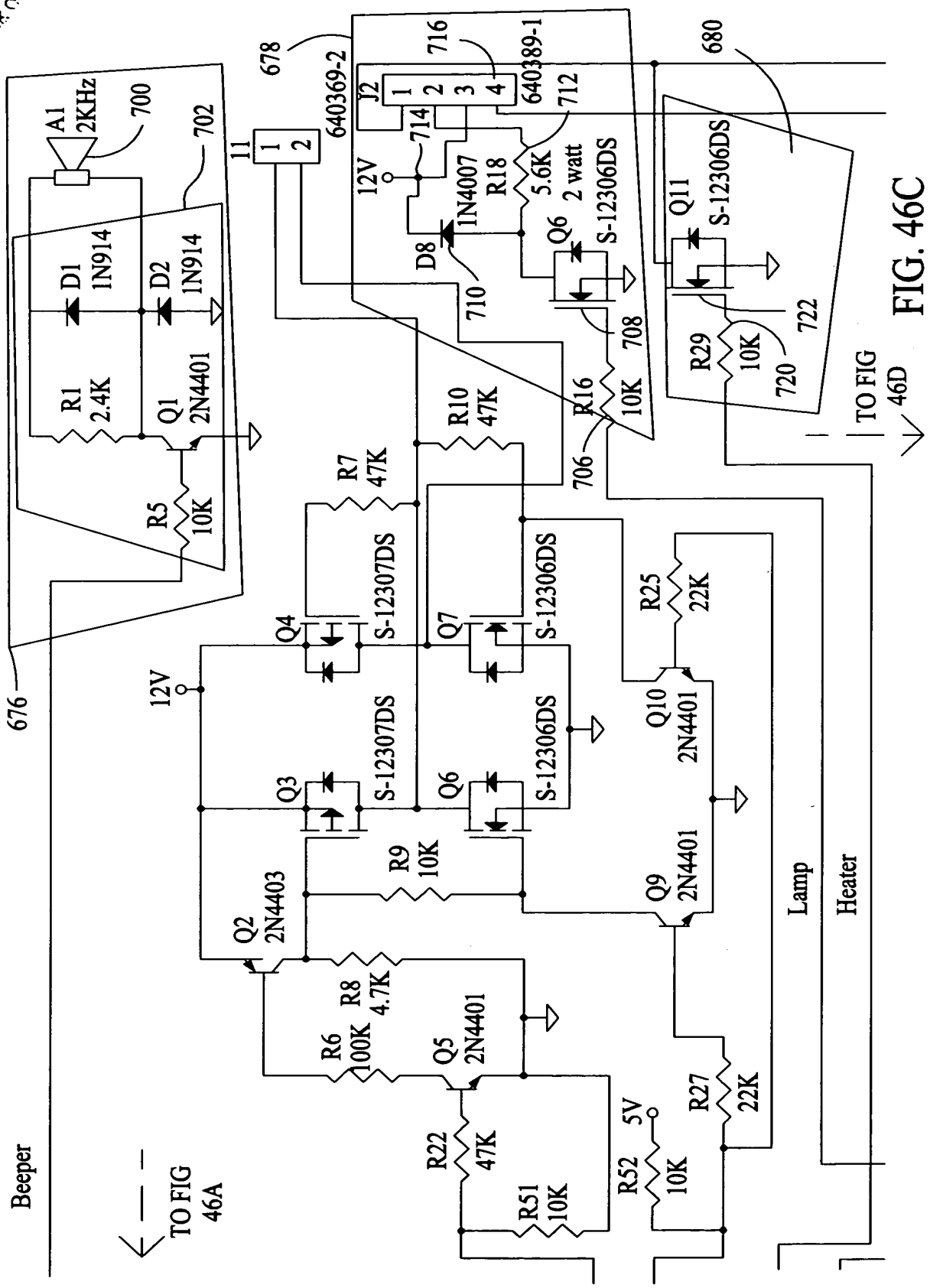

FIG. 46C

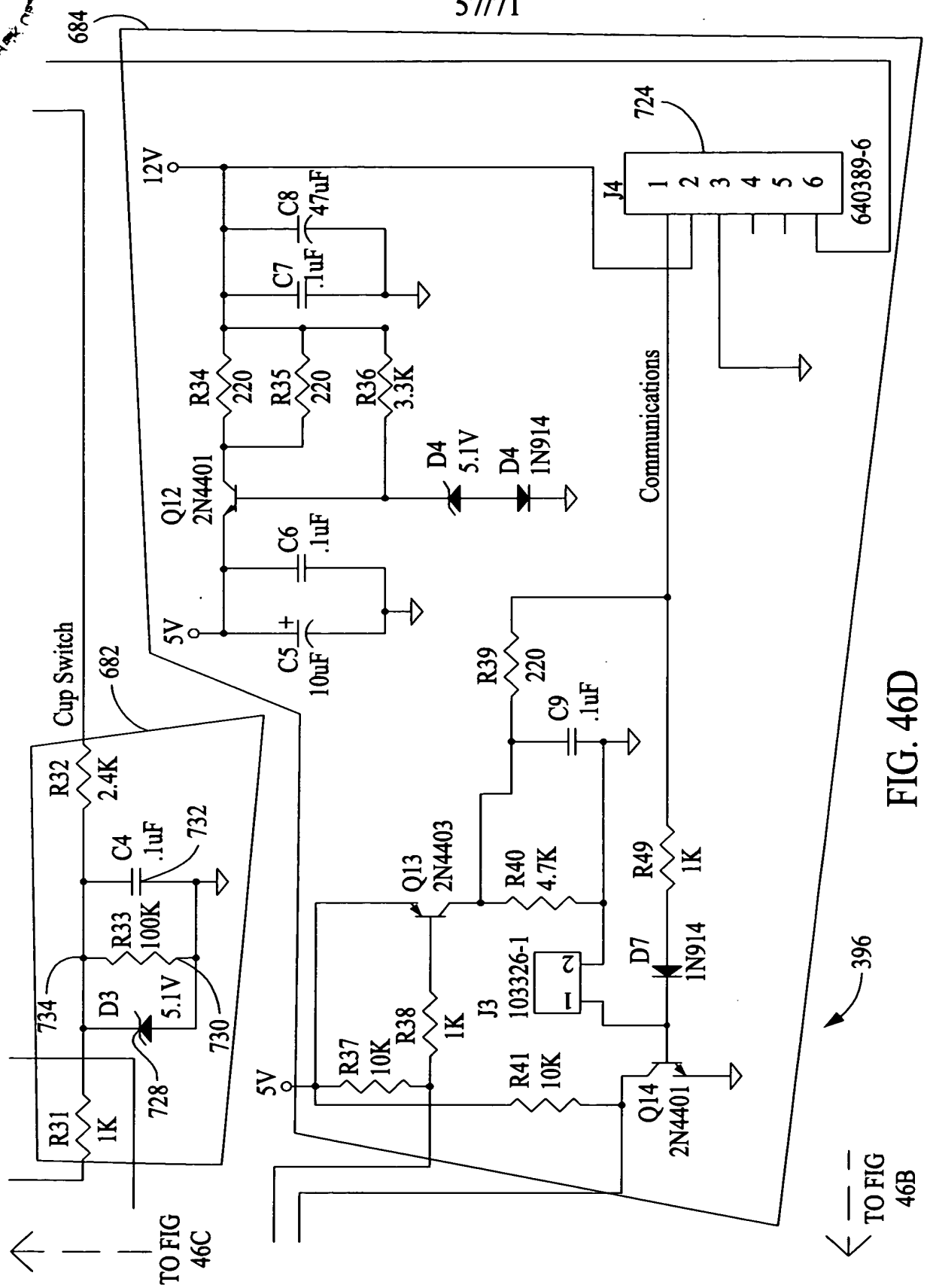

FIG. 46D

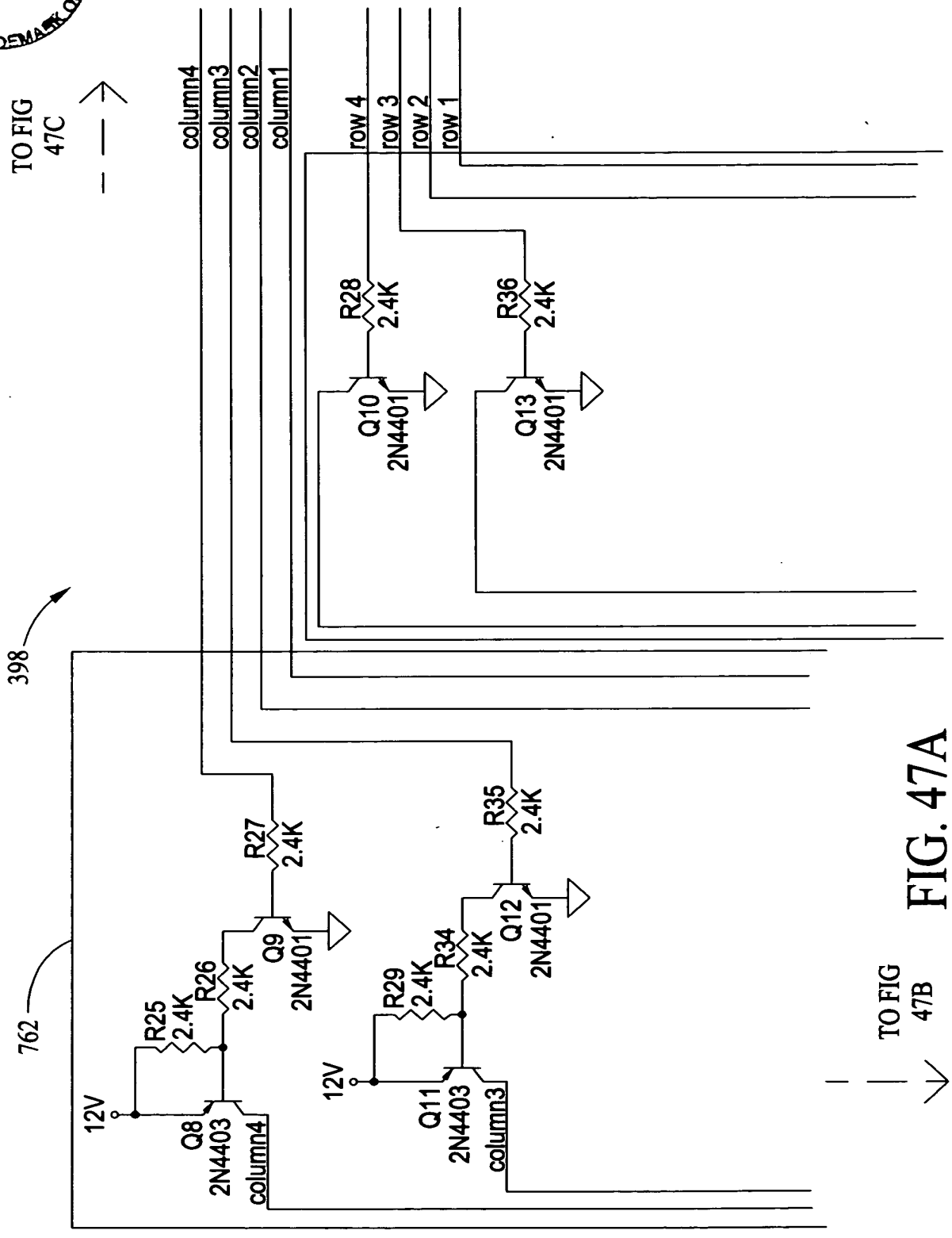

FIG. 47A

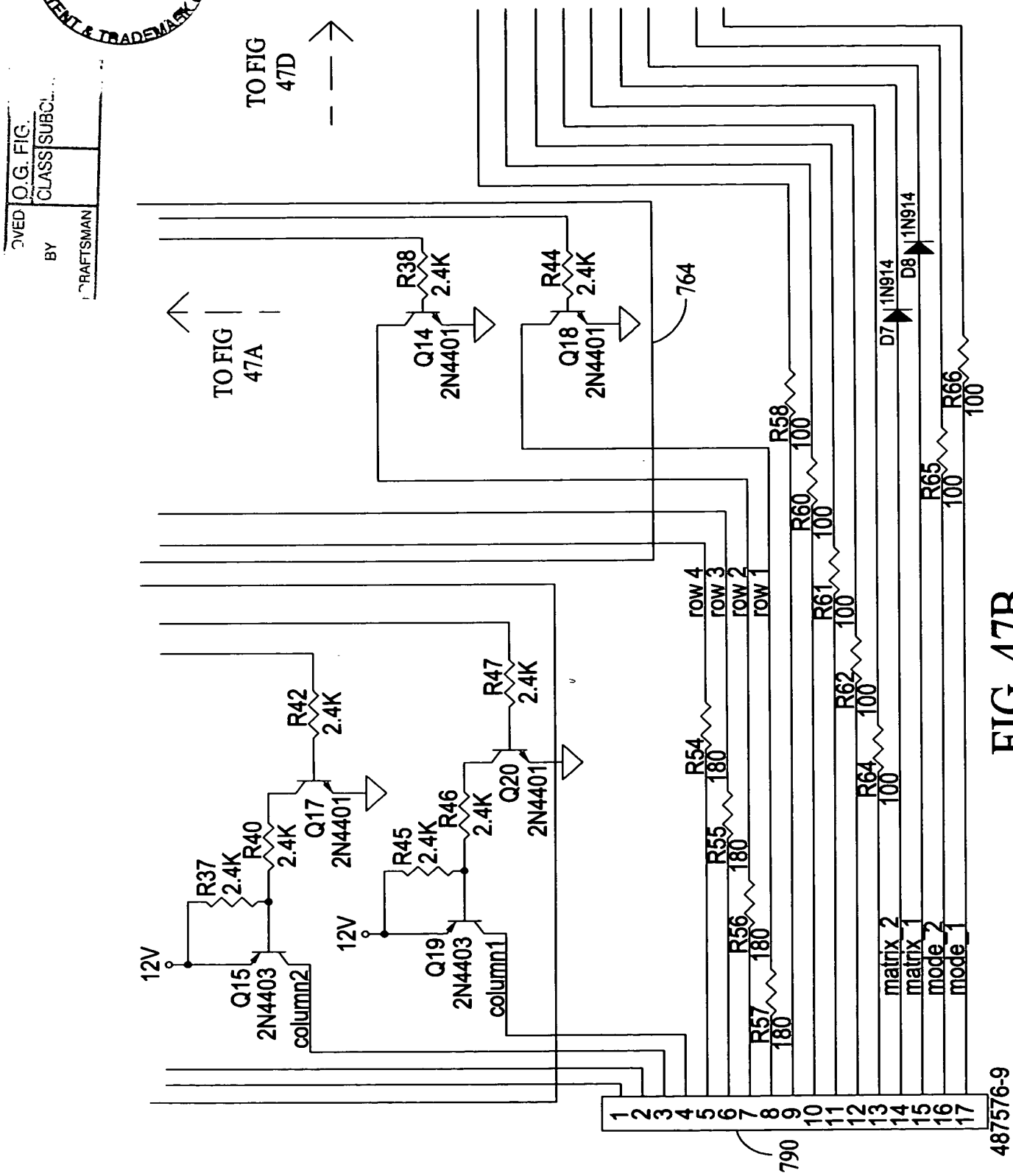

FIG. 47B

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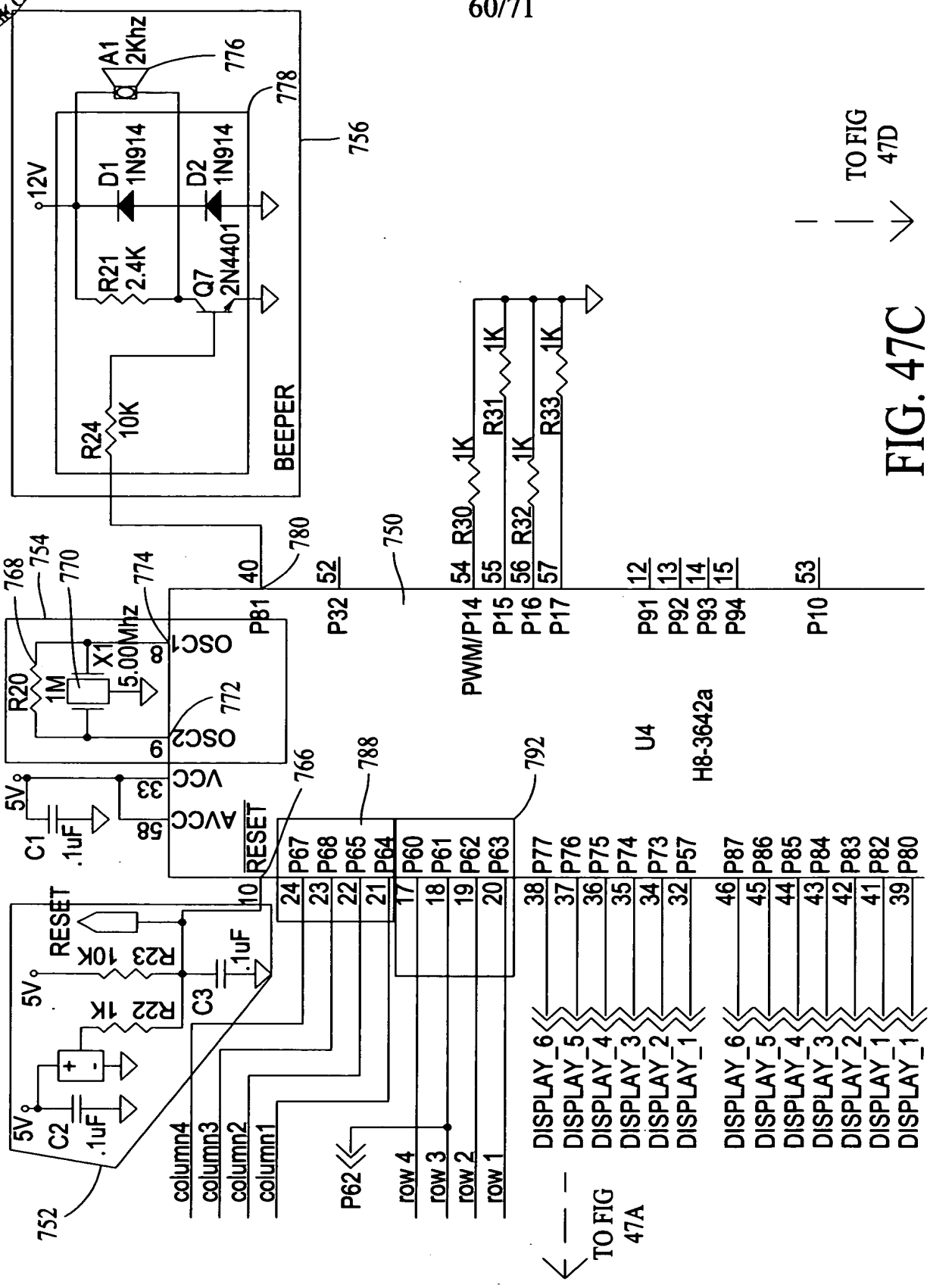

FIG. 47C

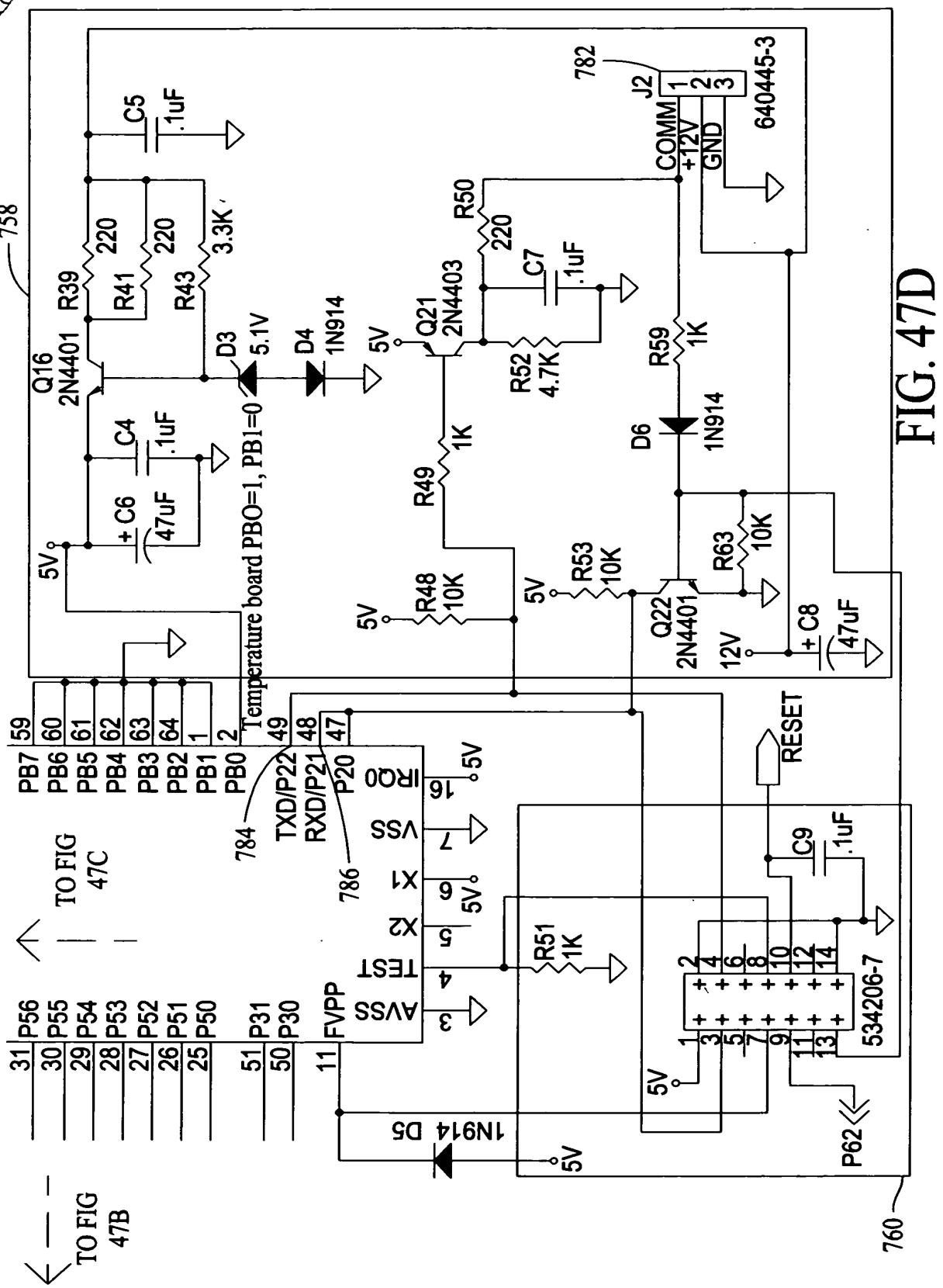

FIG. 47D

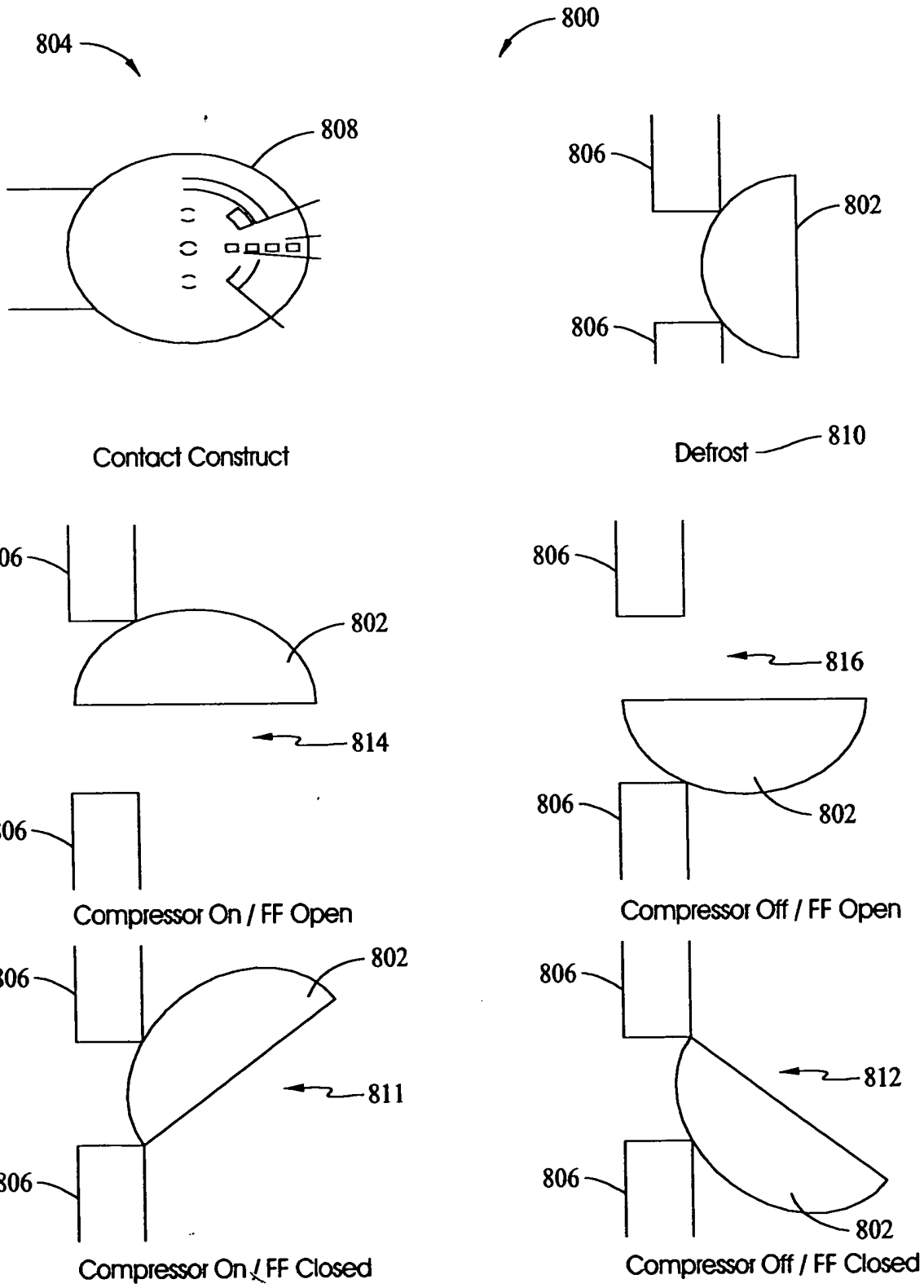

FIG. 48

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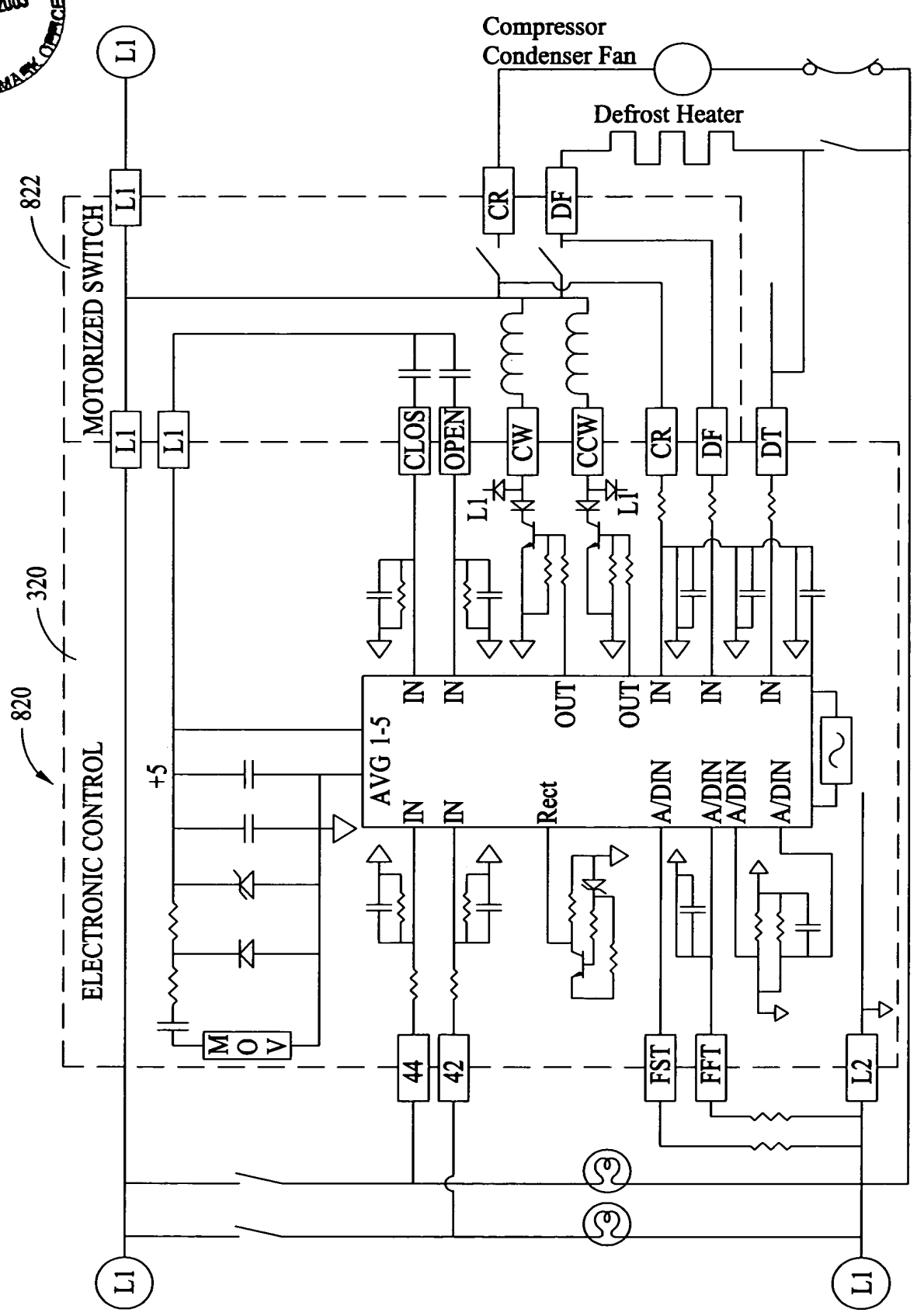


FIG. 49

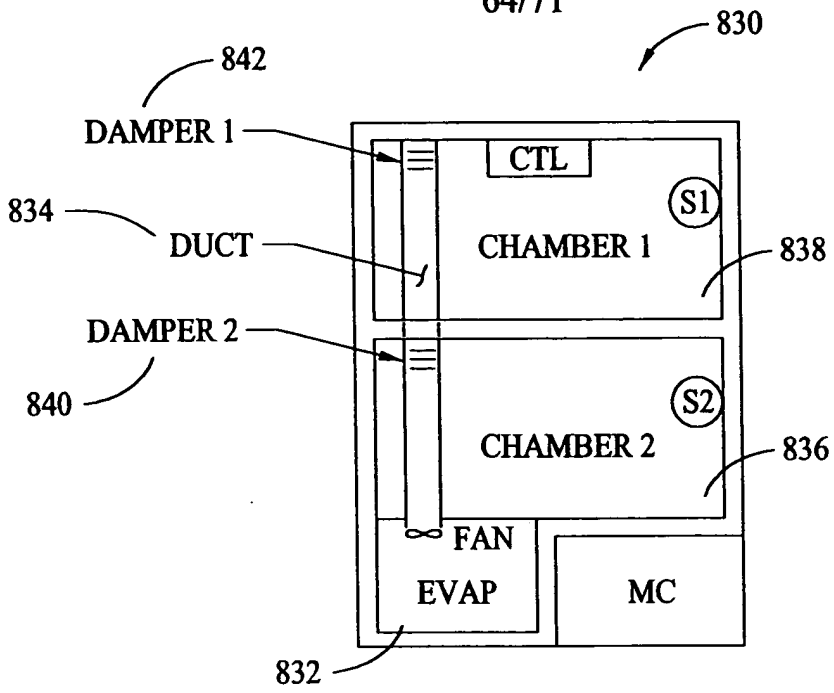


FIG. 50

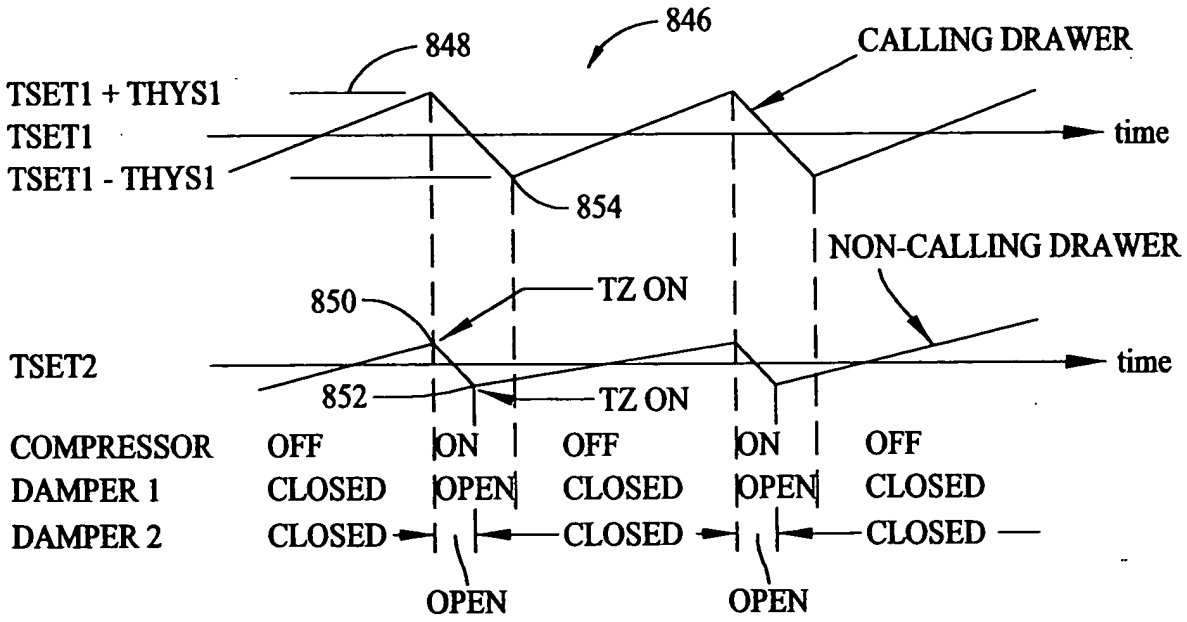
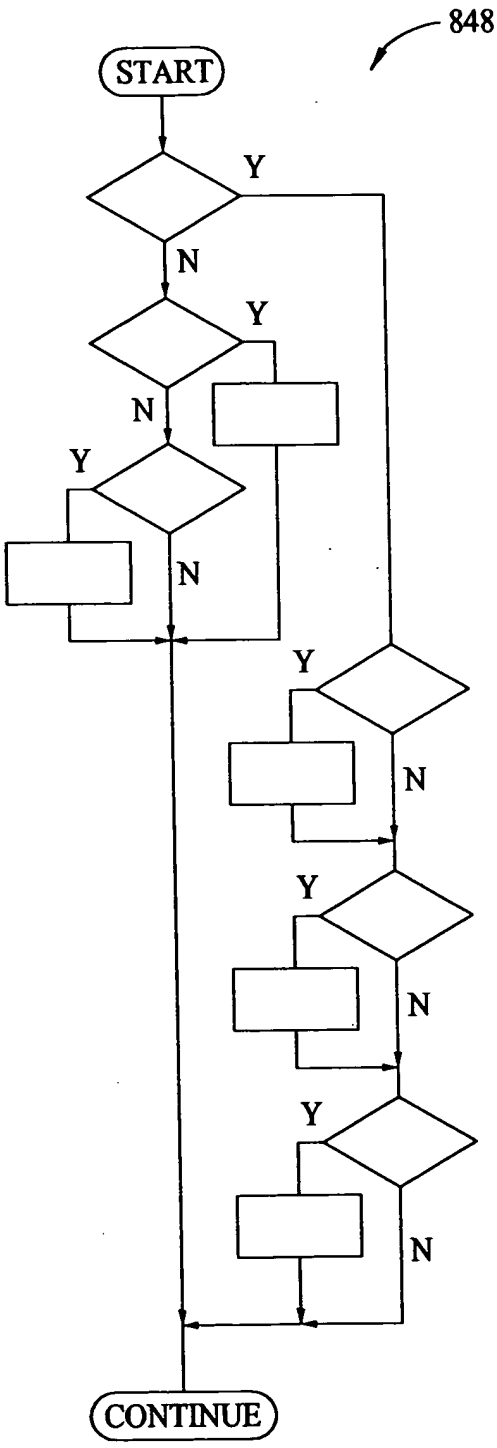


FIG. 51



COMPRESSOR ON?

TEMP CAMB 1 ≥ TSET1 + THYS 1?

COMPRESSOR & FANS → ON
STORE TEMP OF CAMB2 AS T2 ON
CALC. T2 OFF = T2 SET - (T2 ON - T2 SET)
SET T1 OFF = T1 SET - T1 HYS

TEMP CAMB2 ≥ TSET2 + THYS2?

COMPRESSOR & FANS → ON
STORE TEMP CHAMB1 AS TI ON
CALC T1 OFF = T1SET - (T1 ON - T1 SET)
SET T2 OFF = T2 SET - T2 HYS

TEMP CHAMB1 ≤ T1 OFF?

CLOSE DAMPER 1

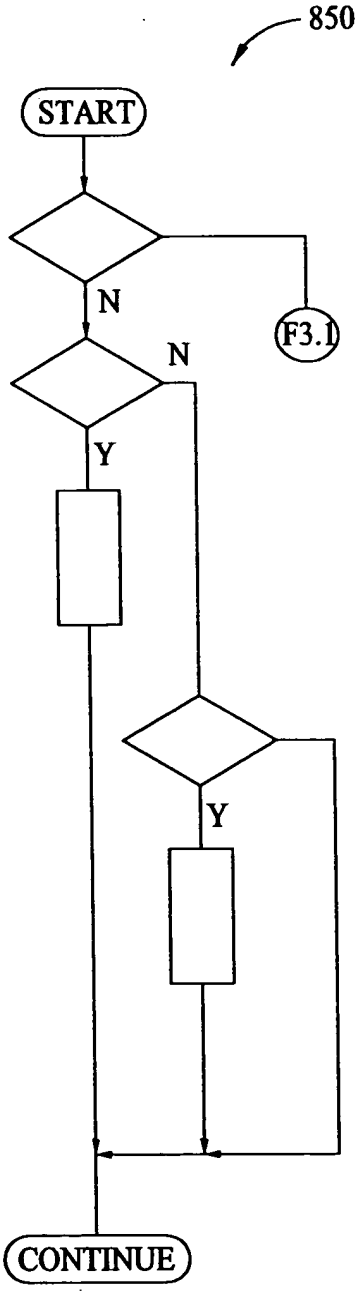
TEMP CHAMB2 ≤ T2 OFF?

CLOSE DAMPER 2

ALL DAMPERS CLOSED?

TURN OFF COMPRESSOR & FANS

FIG. 52



COMPRESSOR ON?

T1 ⩾ T1 MAX

SET DAMPER FOR EQUAL AIR FLOW
TURN COMPRESSOR AND FANS ON
SET CONDITION 1 FLAG
SET T2 ON = T2 MAX

T2 ⩾ T2 MAX

SET DAMPER TO MAX AIR FLOW
TURN COMPRESSOR AND FANS ON
SET CONDITION 2 FLAG
SET T1 ON = T1

FIG. 53

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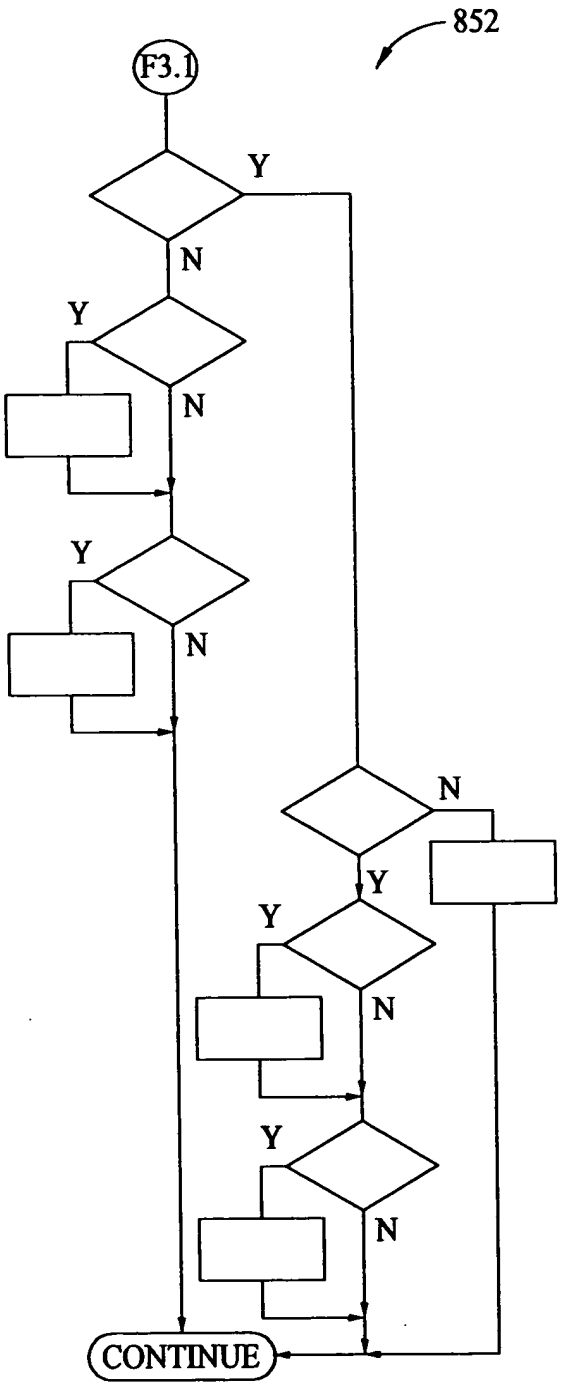


CONDITION 1 FLAG SET?

T2 ⩽ T2 SET - (T2 ON - T2 SET)?

CLOSE DAMPER

T1 ⩽ T1 MIN?

TURN COMPRESSOR AND FANS OFF
RESET CONDITION 1 FLAG

CONDITION 2 FLAG SET?

ERROR - RESTART COMPUTER

T2 ⩽ T2 MIN?

CLOSE DAMPER

T1 ⩽ T1 SET - (T1 ON - T1 SET)?

TURN COMPRESSOR AND FANS OFF
RESET CONDITION 2 FLAG

FIG. 54

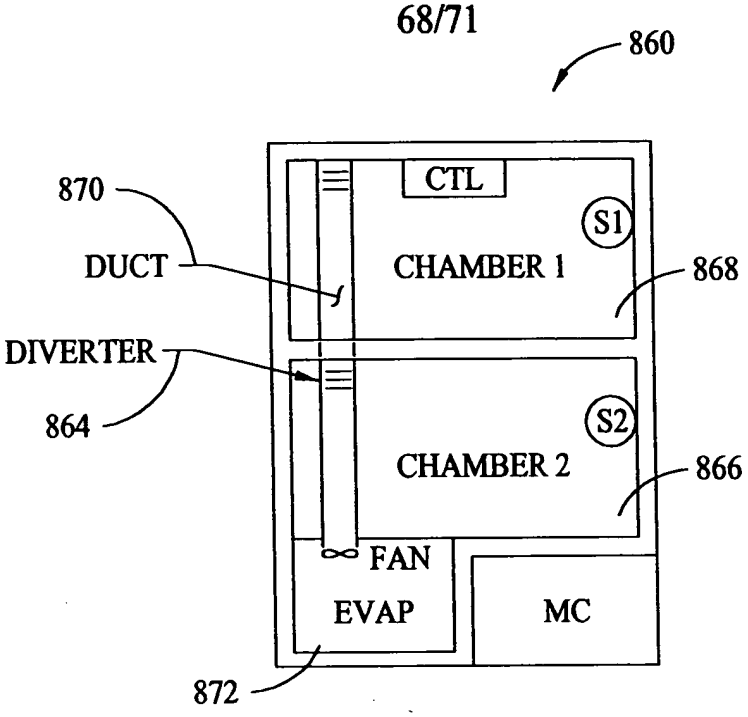


FIG. 55

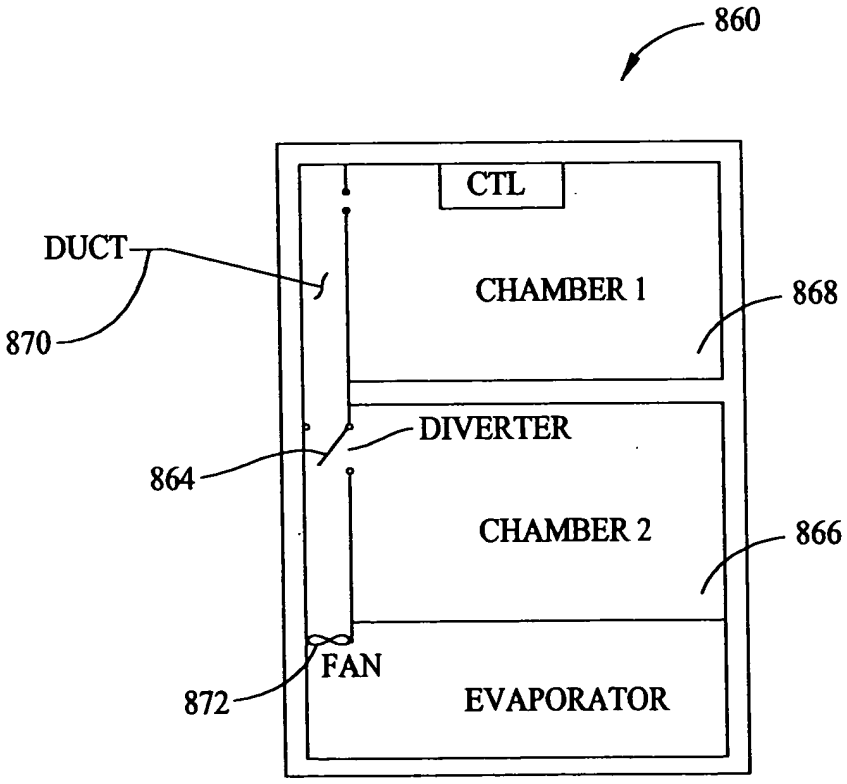
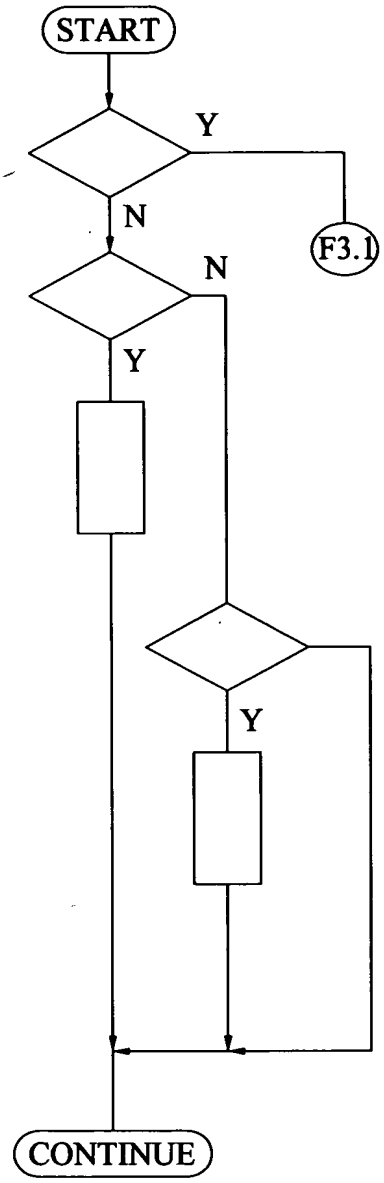


FIG. 56



COMPRESSOR ON?

T1 ⩾ T1 MAX

SET DIVERTER FOR EQUAL AIR FLOW
TURN COMPRESSOR AND FANS ON
SET CONDITION 1 FLAG
SET T2 ON = T2

T2 ⩾ T2 MAX

SET DIVERTER FOR EQUAL AIR FLOW
TURN COMPRESSOR AND FANS ON
SET CONDITION 2 FLAG
SET T1 ON = T1

FIG. 57

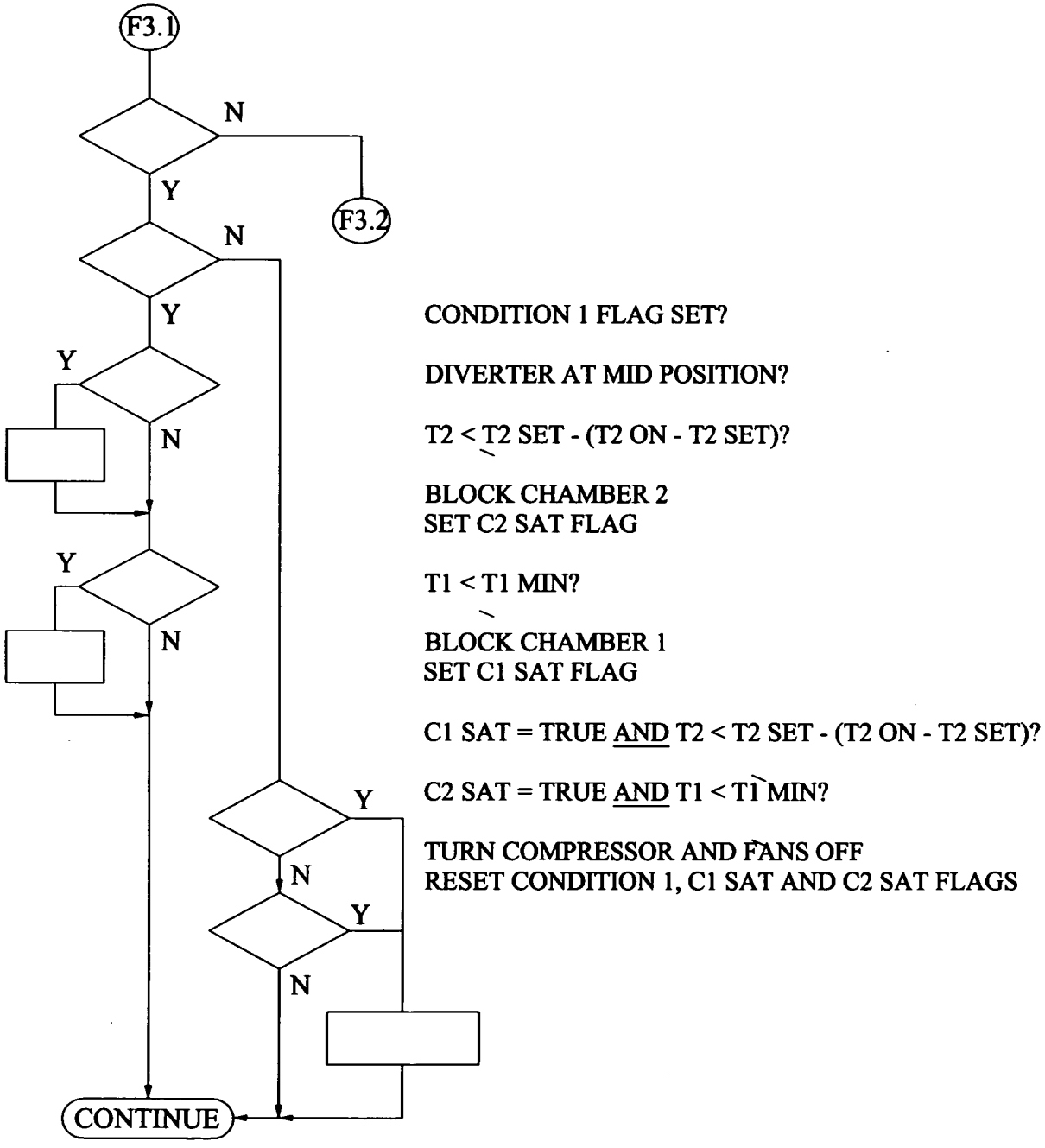
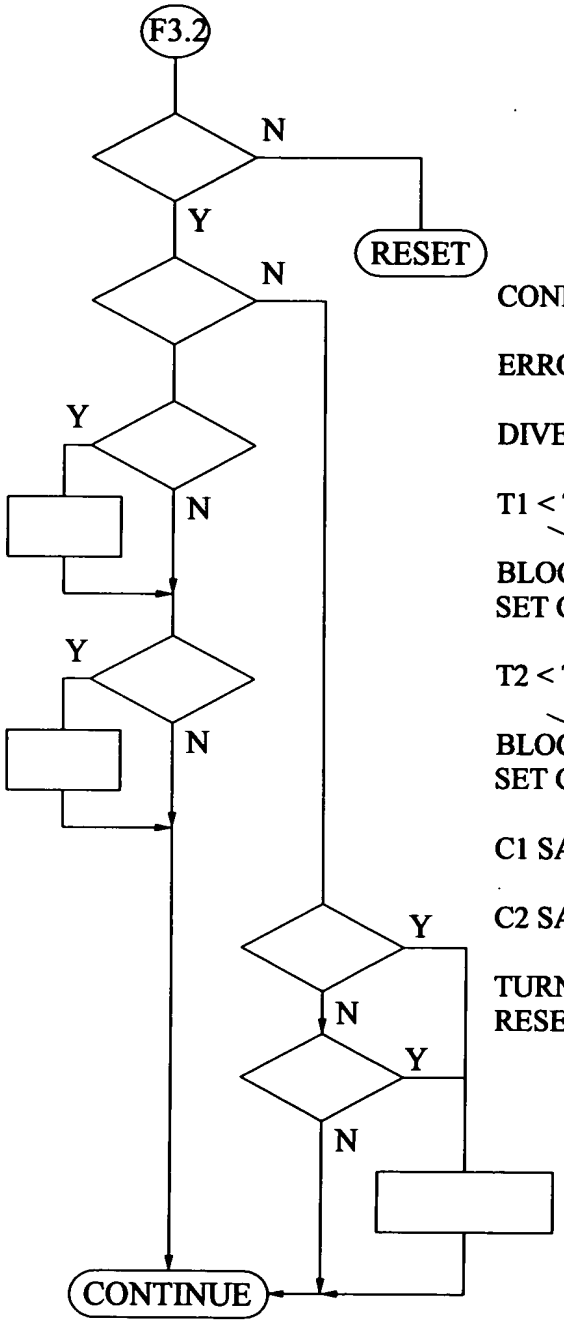


FIG. 58



CONDITION 2 FLAG SET?

ERROR

DIVERTER AT MID POSITION?

T1 < T1 SET - (T1 ON - T1 SET)?

BLOCK CHAMBER 1
SET C1 SAT FLAG

T2 < T2 MIN?

BLOCK CHAMBER 2
SET C1 SAT FLAG

C1 SAT = TRUE AND T1 < T1 SET - (T1 ON - T1 SET)?

C2 SAT = TRUE AND T2 < T2 MIN?

TURN COMPRESSOR AND FANS OFF
RESET CONDITION 2, C1 SAT AND C2 SAT FLAGS

FIG. 59